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The crisis of science

The science budget has been the one component of expenditure on higher education which this Government has (almost) exempted from its public policy of sharp reductions in public expenditure. Yet this relative insulation does not seem to have produced a greater coherence about the appropriate strategy for science research in the 1980s and 1990s. Despite recent reports, such as Merriam on the dual support system, Swinnerton Dyer on postgraduate education, Rothschild on the Social Science Research Council, and the Advisory Board for the Research Councils' own forward look, the best organizing principles for the support of research remain as obscure to some and controversial to others as ever they did.

The retention of some of Pitt after Austerlitz or of Sir Edward Grey in 1914: test case for the light of independence, peer-reviewed research embodied in our present system of research councils. The first, which would require the clear disengagement of funding for research from that for teaching, would have far-reaching consequences. Its final outcome might be the creation of a super league of research universities or the proliferation of virtually independent research institutes. The second, some would argue, would only be the logical outcome of the earlier Rothschild report and its chosen instrument, the customer-contractor principle. The universities have already been obliged to travel a fair way down that road.

Yet neither would do much to help resolve the present dilemmas facing research. These are both strategic, in the sense that they involve delicate judgments about the best balance between pure and applied research, both of which of course are themselves treacherous categories, and tactical, in the sense that they involve the equally delicate and difficult task of redeploying resources to match new priorities. Indeed both the abandonment of the dual support system and excessive enthusiasm for contract research might in the short term make things worse. For the former might give universities the green light to switch even more of their dwindling resources out of general support for research, and the latter might encourage the dangerously seductive illusion that some nebulous "market" could make up our minds for us.

The present crisis of research has two components which can be summed up in two words - researchers and redeployment. The first component can be simply and depressingly described. The number of young lecturers has fallen alarmingly low - 35 under 30 in civil engineering, 26 in mechanical and production engineering, 95 in physics, 47 in geology, and so on - and at the same time whatever precarious career structure existed for researchers has almost entirely collapsed.

The short-hand answer is, "new blood". Yet at the very best this can be only half an answer. Two hundred new posts a year for three years cannot fill up the yawning deficiency

that exists in many disciplines. The "new blood" scheme has two further drawbacks. Because demand will so far exceed supply, it will be almost impossible to prevent the criteria on which these new posts will be allocated from becoming at least semi-politicized.

The research councils are bound to be aware that in the Government's view these posts are being provided to stimulate new initiatives (they have been given no choice over information technology) rather than to repair the research foundations of mainstream disciplines which have been so badly weakened by the enforced contraction of the universities. However much the research councils may want to do the second, they will at least have to pretend that they are doing the first. So more money for information technology less money for nuclear physics.

The second drawback is similar. To sustain the same fiction that extra money is being provided for new initiatives, special conditions have had to be attached to these "new blood" posts that tend to discriminate against those who already have an insecure toe-hold in the academic profession. In the cruelly political logic of the Government, these restrictive conditions are necessary because otherwise the Alice-in-Wonderland quality of a higher education policy that took jobs away with one hand and gave (some of) them back with the other would have been all too embarrassingly plain.

The second component of research's crisis is the difficult task of redeploying existing resources, in people, equipment, buildings and other commitments, to match shifting priorities. Above this hovers the larger question of what those priorities should be. Science research priorities are difficult enough to establish in the best of times. The added complication of the "sophistication factor" under which better and invariably more expensive equipment is always becoming available, while at the same time it has come to terms with the remarkable volatility and dynamism of science itself which produces its own urgent demands for sharp shifts in priorities.

Under this general heading of redeployment the research councils must try to do many things. They must struggle to ensure that their most powerful fiefdoms remain accountable, in the important sense that large parts of their budgets do not become irrevocably earmarked. They must have the courage to take risks, but the judgment to make sure that most of these risks pay off. They must try to contain their commitments to enterprises like CERN. They must make sure that they are not providing more expensive research facilities than they can exploit. They must establish clear priorities that place such emphasis on priority areas that other subjects are allowed to atrophy.

All these difficult, detailed decisions would be easier to take if there was more solid agreement about the proper context for university research. For the last ten years the tide has been flowing strongly towards

greater relevance, which depending on circumstances can be a broad channel or a treacherous rapid. Following the first Rothschild report there has been growing enthusiasm for engaged rather than detached research. The Science and Engineering Research Council's partnerships with the Department of Industry and with the SSRC's switch from discipline-based to issues-related committees are just two examples.

This process can be pushed too far. Universities and research councils are qualified to say what is good science but not necessarily what is useful science. (Who is?) Moreover they have an obligation to nourish research in all disciplines in reasonable proportion. This does not mean that anything should go. It simply means that the criteria for discrimination should be essentially academic rather than political, not because political considerations are illegitimate but because universities are not especially qualified to interpret them. It is also always important to remember that university research is only one segment of the research system, although it may be the most prominent because it often produces the most exciting discoveries. It cannot be expected to shoulder the full burden of the nation's research and development effort.

A few years ago Mrs Shirley Williams, when she was the Secretary of State, used to compare Britain with its many Nobel prizes and disappointing economic performance to Japan which bought in the theoretical knowledge it needed and enjoyed outstanding economic growth despite its shortcomings in fundamental research. Yet the implication of this comparison is doubly misleading. First, there is a worldwide economy in scientific knowledge and someone must do the fundamental research in Britain; rather it suggests that the delivery of new discoveries to productive industry is defective.

Perhaps two general conclusions about the present research crisis are possible. The first is that, whatever the Government may think, the research system cannot be treated separately from the wider system of higher education. If morale is low and policy disorganized in the latter, it will be the same in the former. The two are locked together because they share most of the same people. The plight of fixed-term researchers and the consequent destabilization of the academic profession are very much part of the crisis of research.

The second is that, without for the moment recommending a retreat to the ivory tower, the case for fundamental research in all main disciplines should be reinforced. It is the role of universities to lay the foundations of science. They may help others to erect buildings on these foundations, but that is not their main job. This might mean less emphasis on partnerships with ICI or the Department of Industry, and rather more on cooperation with the Dutch or the Germans to beat the "sophistication factor."

Alienating the intellectuals

In the last three issues we have published a series of articles that explore the general theme of the British intelligentsia - does it exist, should it exist, what are its historic responsibilities? Two weeks ago Bernard Crick suggested the heroic intellectuals of the 1930s may be a myth. Last week Raymond Williams argued that the dominant English culture is peculiarly hostile to radical ideas and their carriers. This week (page 13) A. H. Halsey denies that intellectuals make up a class.

We have always been uncomfortable

with the very idea of an intelligentsia. The word, after all, was invented a century or more ago at the far end of Europe. The alienation of intellectuals may have been a commanding motif of nineteenth century Russia, but Victorian Britain was marked by the incestuous mingling of new ideas and old power. Compare Herzen with Macaulay.

But perhaps one of the most alarming prospects for the 1980s is our growing familiarity with the idea of an intelligentsia: not just as a socio-economic description but as a cultural phenomenon. The popular stereotype of the (conventionally) polytechnic lecturer with his leather jacket and advanced left-wing views may seem entirely trivial, but it may also represent a populist hostility to higher education.

In a similar way the present cuts in universities and polytechnics, fairly or unfairly, are seen as an assault on intelligence. Perhaps the most far-reaching and damaging consequence will be to stigmatize the growth of a truly oppositional and alienated intelligence.

Laurie Taylor



Well gentlemen, as you know, I've called this little meeting so that we may all have a chance to hear from Doctor Gladkind about the current state of play on undergraduate admissions in this department. This is, I must admit, something of a precedent, but I thought some discussion was in order in view of the letter from the University Resources Committee, which advises us, that if we go over quota this year by so much as one student then a number of sanctions will be applied. Specifically, our quota for next year will be cut by 20 per cent, our departmental grant will be halved, the photocopyer confiscated, and our heating turned off for the first three weeks of November. So, Gladkind, the floor's yours. How are we doing? How many offers so far?

So far, Sir, we've made a total of 64 offers, which of course, breaks down into Conditional Offers, Conditional Offers at Pass Level, and Unconditional Offers.

Of course, of course. Do go on. Thank you, Sir. Then, we need to relate these three categories of offer in the relative likelihood of acceptance.

Obviously. And here we're using the traditional formula. That is, taking UO with FA as 1, where FA is Firm Acceptance, then the respective figure for CO at Pass Level with Firm Acceptance is 0.7, and CO other than at Pass Level with FA is 0.38.

Jolly good. But you'll realize, we're mainly in a PA situation, where PA is Provisional Acceptance, and here, as you'd expect we're predicting lower figures. UO with PA is coming out at 0.3, as based on previous years, and CO other than at Pass Level is 0.27, while CO at Pass Level moves up to 0.37.

Do get it move on, Gladkind, I think this is all pretty straightforward. Yes indeed, Sir. So adding in the NR's, where NR is No Reply, we're predicting a nice round 0.333 for NR with CO at Pass, and a rather refreshing high UO with NR of 0.372, although this is balanced by CO other than at Pass Level, at 0.085. Anything else, Gladkind?

Not really, Sir. Except, of course, for the LW figure, where LW is Late Withdrawal. And here using the traditional formula, where D of M is the Degree of Maturity as calculated by punctuality in turning up for interview, the ratio relating this factor with CO, CO at Pass Level, and UO, and the original FA/PA/NR scores, we come up with a likely withdrawal figure for this department of 4. I will be submitting this figure from our overall Probable Entry Figure. Tell me, Gladkind, if by any chance, any freak statistical chance, we actually have one student too many in October, some chap, perhaps who actually should have been expected to withdraw, then how will that be handled?

Then Sir, it will be Option 6, without the sub-clause. What exactly is that, Gladkind? Could you refresh our memory? You and I, Sir, as the senior members of the Undergraduate Admissions Committee for this department, will promptly visit the successful candidate, and break his neck. Jolly good. Any other questions?

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A series to put the world to rights?

On the fifteenth anniversary of Hitler's rise to the German Chancellorship, an influential group of British university sociologists and political theorists want to see right-wing thinkers, in some cases with close fascist links, brought into the mainstream of university course syllabuses.

The dominance of Marx and Weber to the exclusion of other philosophers on university reading lists, is targeted as "boring" by the academics who contribute to a new series on "The Neglected" in the latest issue of the journal of comparative politics, *Government and Opposition*.

The purpose of the series, according to the editor, professor of government at Manchester University, Chila Ionescu, is to resurrect those thinkers active between 1830 and 1940 who have been forgotten or whose ideas have been attributed wrongly to better known philosophers.

"There is a danger of the standardization of ideas because both the right and left have chosen to ignore certain awkward thinkers," he said.

The "neglected" thinkers in the series will include the German historian Otto Hintze and the racial theorist Arthur Gobineau, who still remains closely linked in many people's minds with Nazism. But others who will be included are the anarchist Kropotkin and the Italian social democrat Ferrero.

The introduction to the journal's series was written by Dr John Hall, a sociology lecturer at Southampton University. He thinks that there is a growing desire to look at ideas about nation states and war fuelled by the peace campaign and the Falklands.

"The origins and character of the state are very military and this is something which goes beyond Marx's economic theories. You cannot explain peace and war in Marxist terms," he said.

● Unemployment and the rise of the Nazis: page 12

CNAA asked to divulge secrets

by Felicity Jones

The National Advisory Body has asked the Council for National Academic Awards to divulge privileged information collected in the process of validating courses so that it can be used to decide which courses and colleges can be cut.

This request could split the CNAA at next month's council meeting. Some members will argue that to pass this information to the NAB would amount to a breach of faith with the institutions which the council validates, and that for the CNAA to allow its academic judgments to be fed into the NAB's planning exercise could compromise the neutrality of the council.

Even if the CNAA agrees to cooperate with the NAB, it will insist that the affected colleges will have to give permission before the council passes on any information or assessments. This will mean that the NAB will have to inform threatened colleges of any plans for closure before they become final.

If the CNAA refused effective cooperation, the NAB will have to fall back on the patchy advice offered by HM Inspectors.

The request came in a letter addressed personally to Dr Edwin Kerr, the CNAA chief officer, but the content was considered so potentially explosive that he has decided to put it before the full council on March 15. In the letter, Mr John Bevan, the NAB secretary, outlines ways in which the CNAA might cooperate with the "rationalization" exercise.

Three areas of broad comment would be unlikely to prove controversial: factual information, such as student enrolment numbers, can be most conveniently gathered from the council as the validating body.

And the request for the council's views on strategic matters, such as what proportion of maintained sector students should be mature or studying part-time, and wider issues, such as the place computing should have in higher education, is also unlikely to cause much controversy.

The sticking point will be the suggestion that the council make available qualitative judgments made about particular courses and colleges, which would mean revealing information obtained for the sole purpose of validation.

Some council members feel strongly that cooperating with the NAB, particularly on providing some sort of "ranking list" of colleges,

could seriously undermine the validating procedure. Many feel that another independent agency, such as HMI could provide the information equally well.

At the last council meeting a minority felt the CNAA should collaborate with the NAB in its task, but no decision was taken over the nature of that cooperation.

Dr Kerr thought that a balance could be struck so that information would only be given with the approval of the institutions. But this could prove impractical.

Similar requests have also been sent to the Business and Technical Education Councils and the Council of Validating Universities.

Mr Bevan said that the NAB was asking the council whether at the later stages of the planning exercise, when certain plans have been formed about reducing or closing a college's course, the CNAA would feel able to "signal" whether that course was of particular quality and therefore should not be cut.

"The CNAA has a reservoir of very considerable knowledge about colleges and the exercise would be the power if it did not cooperate," he said.



Children in the Falklands are to receive a special Valentine's Day message from Sarah Green of BBC Television's *Blue Peter* fame, courtesy of students at West Bromwich College of Commerce and Technology. Students on the college's television and audio production course, pictured talking to television news readers Sue Beardsmore and Cathy Roehford came up with the idea while planning the fifth in a series of audio-greeting tapes for troops.

Tenure row delays charter

by David Jobbins

Ministers are anxious to force the pace over university proposals to weaken tenure for university teachers. They think that vice chancellors are moving too slowly with modifications to tenure which were circulated to the universities for discussion and local implementation nearly a year ago.

And they are keeping up the pressure by insisting that the tenure question is raised whenever new or revised university charters are sought from the Privy Council.

The first example to come to light is the lengthy delay in granting a charter to London University's Institute of Education. The institute lodged its application two years ago but was told last month that it should consider redundancy as a ground for dismissal of academic staff.

The institute had followed the prevailing tenure provisions in the rest of London University, which permit dismissal only for "grievous cause" - essentially serious misconduct.

Secretary Mr Eric Enfield said the institute had had an inkling the delay had arisen because of the tenure issue. "The Privy Council's recommendation is to be considered during this term at institute meetings in consultation with the local Association of University Teachers," he said.

The institute will have to balance whether erosion of academic tenure is too high a price to pay for a charter. It is currently operating under an outdated scheme of management and suffers a number of legal anomalies.

Vice chancellors from about half Britain's universities are continuing to discuss how the tenure proposals, circulated by the Committee of Vice-Chancellors and Principals can be implemented. These include dismissal for reason of redundancy or "financial exigency" and a tightening of the probationary periods to make it more difficult to achieve tenure.

One symptom of ministerial concern at the slow pace is the difficulty experienced by the University Grants Committee and the research councils in persuading the Government that new blood grants should be ordinary academic appointments.

Cuts could eventually cost one in six jobs

by John O'Leary

One in six academic jobs in higher education will have disappeared when the Government's four-year programme of cuts finishes in 1985, according to spending plans published this week.

But the Public Expenditure White Paper (Cmd 8789) promises at least a brief respite if the Conservatives are returned to office at the intervening General Election. It gives no forecasts on student numbers beyond

the current academic year and gives no hint of the distribution between the universities and the public sector beyond 1983/84.

The Department of Education and Science's chapter notes that only the "present phase" of contraction will end in 1984/85. But in the following year, if pay and prices have been kept within the Government's targets, it says: "The cash available should be sufficient to allow the level of provision in each sector to be broadly maintained in 1985/86, subject to an appraisal of the results of

contraction and of the requirements of each sector of higher education in the long-term."

Higher education does marginally better than education as a whole throughout the period projected in the White Paper, but this is largely due to falling numbers in the schools. Overall expenditure on education increases by 6 per cent between 1983/84 and 1985/86 and assumes a 4 per cent rise in all educational costs next year.

The total far further and higher education rises by more than 8 per cent in the same time, as does spending on science. The DES expects that the present level of support for science can be maintained "and increased slightly after 1984" if costs can be contained.

Discussions have started already between DES officials and representatives of the University Grants Committee, the National Advisory Body and the voluntary and maintained colleges on the question of student numbers. Previous projections were thrown out by the unexpectedly large influx of students in colleges and polytechnics in the last two years. An official said that the consultations were intended to fit further recruitment to Government policy.

Government spending on education and science was £75m above planned levels in 1981/2 until it was planned to overshoot by about £40m in 1982/3, largely as a result of the increased spending on student awards caused by the additional numbers in colleges and polytechnics. Student numbers on all advance courses rose by 10,000 over the two years. Non-advanced numbers rose by 44,000, but are expected to begin declining after 1984 in line with the 16-19 age group.

Reagan plans 17% boost for research

from Peter David

WASHINGTON President Reagan intends to boost the United States science budget by 17 per cent in 1984 with substantial funds earmarked for upgrading university laboratories and helping talented young scientists make careers in research.

The increase was announced this week in a budget proposal which calls for a freeze on overall federal spending and reductions in spending on education, job training and welfare. The budget is expected to en-

counter strong opposition from Congress.

Mr George Keyworth, the president's science adviser, said science had been given favourable treatment because the administration believed research and development were essential tools for strengthening long-term industrial growth and national security.

The 17 per cent increase over 1983 spending would include a 10 per cent increase in support for basic research. This would result in a two year growth in federally supported research and development of 25 per cent.

War waged on copyright 'pirates'

by Paul Fletcher

MP's, publishers and the Department of Trade are preparing an onslaught against the "piracy" of copyright books which costs British publishers up to £100m a year in lost earnings.

The international division of the Publishers' Association, which has 250 members covering 400 imprints, last week agreed to set up a £50,000 fighting fund to wage war on the pirates over the next three years.

Piracy costs publishers about £500m a year worldwide, and as British losses increase publishers have decided to act before the problem becomes uncontrollable. The range of new titles as well as jobs in the industry are under threat.

Mr Anthony Read, director of the international division, said some of the pirate operations, particularly in the Far East, seemed highly organized. There was also concern about piracy in West Africa, the Middle East, and "local" pirates in Britain.

The Department of Trade is setting up a new counterfeiting unit which will use diplomatic and political pressure to persuade foreign governments to fight piracy of all goods including jeans, cars, perfumes and video tapes, as well as books.

Dr Gerard Vaughan, minister for consumer affairs, announced the move last month. He is keen to attack the "great pretenders" hitting

British industry. The unit will have five staff.

Simultaneously, a new all-party Parliamentary committee on publishing, chaired by Mr Ted Rowlands MP, has been set up to raise issues of general concern, including piracy and give them a higher priority.

Mr Rowlands warned that the "remarkable diversity" of new titles published each year in Britain could not be maintained in the face of such unfair competition. In 1982 there were 48,300 new titles and 10,360 new editions published in the UK.

"We are not after the poor student who copies a few pages from a textbook," he said. "We are after the large-scale organized commercial chicanery of material. It is utterly wicked and leading to the blatant destruction of our publishing industry."

Countries under particular scrutiny are Jordan, Syria, Egypt, Taiwan, Singapore, Malaysia, Korea, the Philippines, the Indian subcontinent, and Nigeria.

Funds put in the publishers' fighting fund will be used to publicize such cases and spread information on how to fight pirates overseas. Legal cases are pending in Nigeria, Singapore and India. Successful work in Jordan has unearthed a 1911 Ottoman Law which gives copyright protection. A test case was recently won against the Jordanian minister of education.

NAB's cutback plans face 'no redundancy' snag

Local authority "no redundancy" policies could be a serious stumbling block in the National Advisory Body's bid to reduce spending on public sector higher education.

About half the polytechnics, mainly those with a Labour-controlled education authority, have some form of "no redundancy" policy. Up until now, staff have been shed through voluntary redundancy and early retirement, aided by the attractive terms on offer to lecturers over 50.

But that source is rapidly running dry, especially in polytechnics which have already made quite savage cuts. Administrators doubt whether younger lecturers will be prepared to leave under the Government's discretionary scheme.

Newcastle education authority has a policy of no redundancies for financial reasons only. It is possible to allow redundancies when a course collapses, such as with a nursing degree. But Mr Gerald Dearden, the polytechnic assistant director for personnel said because of the NAB exercise no such claim could be made.

He thought very few people would touch the new Government scheme which was "niggardly". A restructuring fund along the lines provided by the universities would be the only way to ease the situation, he added.

Principal on NTI group

The Manpower Services Commission finally announced this week that Mr Michael McAlister, principal of Blackpool College, is to be the further education representative on the national steering group for the New Training Initiative.

This follows strong protest from the National Association of Teachers in Further and Higher Education after the MSC of first announced the appointment of a 15-strong group

which did not include any member directly connected with further education.

The commission also announced the long-awaited criteria to which local education authorities will have to adhere to when putting in their bids for one of the 10 pilot projects under the New Technical Vocation Education Initiative. Up to now 73 local authorities have expressed interest.

Government happy with biotechnology promotion

The Government is satisfied with existing arrangements for the promotion of biotechnology and will make no major changes to meet the criticisms made by the House of Commons Select Committee on Education, Science and the Arts last year.

In its reply to the committee's interim report on biotechnology, released on Wednesday, the Government brushes aside the members' main concern - the pressure on the dual support system for university research, produced by the University Grants Committee and the Science Research Council. A memorandum from the Secretaries of State for

Industry and Education and Science sent to select committee chairman Mr Christopher Price MP plainly draws attention to the earlier recommendation of the Morrison report that universities should channel more research funds into selected areas.

The bulk of the 21-page memorandum is taken up with a review of existing initiatives by the DES, UGC, research councils and the DoI. The committee's recently announced "new biotechnology" scheme, a few changes to the research support system, and a select committee on biotechnology, are all mentioned.



Lady Tanlaw cut the cake when Lord Tanlaw (far right) opened the eighteenth century Old Town Mill which the University College at Buckingham has restored to provide improved catering and recreational facilities for students and staff. Also pictured are Professor Alan Peacock, university principal, and Mrs Peacock.

Swinerton-Dyer calls for more balanced Ulster body

by Karen Gold

The University Grants Committee is to blame for widely-criticized proposals for a Ulster higher education planning body, Sir Peter Swinerton-Dyer told the Commons Select Committee on Education, science and the arts.

Sir Peter, who chairs the steering group overseeing the merger between Ulster Polytechnic and the New University wrote to the Department of Education Northern Ireland opposition to the inclusion of only two Ulster representatives on the body, with the remaining five coming from Great Britain.

"DENI may indeed believe that already," he said. "It is a matter of persuading the UGC. I conjecture that DENI would like a more balanced body... the balance is the result of negotiations between DENI and the UGC, and isn't necessarily what DENI would wish."

Mr Derek Birley, vice chancellor designate of the merged institution criticized the balance of the body, the omission of representatives from further education, and its dependence on the UGC, which it will simply advise.

One department is putting its trust in the UGC to get the funds for the totality of higher education. I just hope that the trust isn't misplaced... I think that is the most dangerous part of it," he said.

The merger was running smoothly, with new programmes for both institutions under discussion, Mr Birley said.

Adult classes hold steady

Local authority adult education classes held their enrolments steady and raised fees by 8 per cent in 1982, although some authorities diverged dramatically from the general pattern.

Of the 104 local authorities, 98 replied to the annual survey of fees, enrolments and enrolment organizations. The National Institute of Adult Education and the Advisory Council for Adult and Continuing Education. Their average fee for non-vocational classes was 55p an hour, compared with 51p in 1981.

But in one authority - Trafford - fees rose to £1.04 an hour, not only an increase of almost 10 per cent, but also almost 20p more than any other authority.

Trafford's "no subsidy" policy for non-vocational classes also affects its concessionary fees. Adult education organizers in the area are concerned that although local pensioners pay only half fees, they also only count as half-students, meaning that for a class comprising all pensioners, the fee payable there must be 24 of them instead of the usual 12 students.

The Institute of Manpower Studies at Sussex University is to extend its study of the movements of biotechnology researchers between countries. The study was commissioned by the Science and Engineering Research Council because it feared that a "brain drain" of researchers might be gathering momentum after several well-publicized departures to overseas laboratories last year.

Limited approval for poly engineering

by Jim Turney

Science Correspondent
Extended engineering degree courses in the public sector are likely to be shelved later this year but the Department of Education and Science want to restrict initial experiments to a few centres.

After the Council for National Academic Awards decided last December to introduce new BSc (Eng) and BEng awards, the National Advisory Body put forward proposals for six courses in three polytechnics - Kingston, Hatfield and Brighton.

The proposals implied they should have some extended engineering courses and had strong backing from the NAB's engineering working group.

The DES did not approve the proposals but it invited the NAB to formulate new guidelines for similar courses, including some extended ones. In effect, the department conceded the principle that there should be some longer courses, but did not say how many there should be or how they would be funded.

Much will depend on the view of the Engineering Council, which is expected to produce a verdict on the need for extended engineering courses later this year.

Mr Richard Bird, deputy secretary at the DES, stressed the lack of official enthusiasm for longer courses in a letter last month to Dr Kenneth Miller, the council's first policy statement. He said the department "remains to be convinced of the educational and industrial need for any widespread provision of extended first degree courses other in universities or in the public sector".

He suggested that the development of engineering applications courses which the department saw as a priority, should be accommodated by longer academic terms rather than longer courses.

The advisory body's engineering working group has made further recommendations to the NAB board. Last week it agreed to invite up to 10 institutions to submit new course proposals along the lines of the CMAA outline.

Some of these would then be put to the DES for approval. The institutions have not yet been chosen. The department should approve the next set of proposals but officials seem many more some colleges wary about submitting courses.

London medical dean resigns

The dean of the London Hospital Medical College, Professor David Ritchie, has resigned a year after taking office.

His resignation follows three months' leave of absence to consider his position after heads of departments in the college tried to persuade him to relinquish his post.

The college maintained last December that Professor Ritchie was expected to resume his duties as dean at the end of January. It is now seeking a replacement and the acting dean, Professor Michael Floyer, will continue until an appointment is made.

Professor Ritchie, who heads the college's department of surgery, began his contract as dean in October 1981. He is now more than a year into his post.

Professor Ritchie's leave of absence followed a vote of no confidence in him which around half the college's 30 heads of department signed last September.

The college may now alter the dean's terms of service to make the post a full-time appointment. Professor Ritchie and the college secretary Mr James Walmesley, both declined to comment on his resignation.

Medical lecturers face sack

by Sandra Hempel

Four lecturers at Guy's Hospital Medical School face the sack in September despite the widely-held belief that they have tenure.

The two lecturers and two senior lecturers are in the school's medical physics department. It will close when its head, Professor Sidney Wyard, retires this year.

The decision to close medical physics was made in July 1981 because of falling demand for its teaching. It was set up about 60 years ago to cater for medical students whose knowledge of physics was inadequate. Now, because most offer A level physics as one of their entry qualifications there is less need for the department.

When the redundancy notices were first issued it was believed that the staff would be redeployed, but there are signs that the school intends to sack them. The legal situation is unclear and would need to be tested in court. While their contracts state they are to be employed until the date of their statutory retirement, another clause allows for three months' notice on either side.

The sixth member of staff in the physics department is a reader. Like Professor Wyard he is appointed by the University of London rather than the medical school and expects to be kept on.

The Association of University Teachers is trying to get the issue raised at the next academic board meeting in March. Mr Bill Hennessy, the regional AUT official said: "The matter was originally presented as the closure of a department rather than sacking of staff."

"Now that dismissal is involved, we believe that the individuals concerned have the right to demand their cases be heard by the academic board," he added. "We have been trying to find ways of resolving this for some time but there does not appear to be any willingness on the other side to find a solution."

The AUT is particularly annoyed that the school is preparing to go ahead without waiting for the conclusions of a working party on medical physics in London.

Dr Alan Houston, the dean of the school was not available for comment.

Scottish students forced to quit

by Olga Wojtas

Scottish Correspondent
Almost 1,500 Scottish students have been forced to leave university or college because of new grant regulations, according to the Scottish National Union of Students.

Last year, the Scottish Education Department axed repeat year grants, except on stringent medical or compassionate grounds, with an estimated saving of £2.2m, despite opposition from both students and university and college principals.

The SED has confirmed that 1,450 students have dropped out of courses, but said that some may have found alternative ones, or alternative funding. However, alternative courses will be eligible for an SED grant only if they do not exceed the original period of funding - for example, a student on a four-year honours course might be able to transfer to a three-year ordinary degree course.

Mr Bob MacLenn, chairperson of the Scottish National Union of Students, said: "I presume these 1,500 students will have joined their contemporaries on the dole."

Students who repeated a year were generally successful in gaining their degrees, he said. "The Government would be making a better investment if they paid for an extra year of education rather than making a less constructive use of public funds in dole money."

The SED is likely to oppose government attempts to make changes in student travel awards. At present, each student receives a flat rate of £50, and can claim if daily travel and three return journeys home are in excess of this.

But the Government is reviewing the system and is said to be considering a split between students living in home and those away from home.

However, Scotland has a different pattern from the rest of Britain with

a large number of students living at home and travelling considerable distances daily.

Mr MacLenn said: "About 90 per cent of Glasgow University students and 75 per cent of Strathclyde students live at home, and 30-mile-a-day round trips are not uncommon."

The SED met 45,000 claims last year, and while the average travel claim is around £150, Mr MacLenn said there were many Scottish claims of £400 and £500.

"Any change in the travel grant, particularly a flat rate, would be ridiculous in Scotland because there are many people with very long start of term journeys, such as Shetlanders and students from the islands."

The NUS (Scotland) had made all these points to SED officials, said Mr MacLenn, and had received a firm commitment that they would be consulted again before any moves were made.

NUS women rise to top

Women are likely to outnumber men on the National Union of Students' new executive for the first time in its 60-year history after elections at its Easter conference.

When nominations closed last week, the national secretary Ms Jane Taylor and the vice president welfare Ms Sarah Veale, were predicted to hang on to their posts for a second term.

Three out of the four National Organization of Labour Students' candidates for part-time places on the executive are well placed to win. The Social Democratic Party, the Left Alliance and the Socialist Student Alliance are also running female candidates, thus paving the way for a female majority.

The SDP presidential candidate, Ms Jacqueline Sadak, is likely to be a focal point in opposition to Mr Neil Stewart, who is seeking a second term for the NOLS. The SDP is also opposing the NOLS-backed vice-president for education, Mr Tommy Sheppard, who is seeking re-election.

The most bitter contest will be for the post of national secretary. The loyalty of Labour Party students will be divided between support for Ms Taylor, who is standing for the Left Alliance, and Mr John Moore, who, although a Labour Party member, is standing on a Socialist Students Alliance platform.

Neglect of research 'hits health service'

Neglect of health policy research is one reason for poor decision-making about expensive medical techniques in the health services, according to a new report from the Council for Science and Society.

The report criticizes the research councils and the Department of Health for their failure to coordinate funding of health services research, and proposes the founding of a national institute of health service research.

It says research into costs of new techniques, clinical trials and epidemiological, psychological and policy studies are poorly funded at present by the Social Science Research Council because of its overall cut in budget.

Funds for research from the DHSS have also been severely curtailed, it suggests. And the Medical Research Council's health services panel, which now dispenses much of the money the DHSS used to control as a customer, is heavily biased towards biomedical rather than psycho-social or administrative research.

At the same time, the cuts in universities are affecting academic departments of community medicine, the report says, so that every potential source of funds is under pressure. One of the members of the working party which produced the report, Professor Margaret Stacey of Warwick University, explained that the blurring of responsibilities in this field between the DHSS, the SSRC and the MRC meant "people on the

receiving end are confused about where to go for money".

"The MRC has been given money for this purpose," she said, "but is not geared up to spend it properly."

Another working party member, Dr Rod Griffiths, formerly of the Health Services Research Centre at Birmingham University and now a district medical officer in the city, said that one problem was the research councils' use of scientific excellence as their sole funding criterion, with no consideration of the relevance of a piece of research.

"Expensive Medical Techniques. £2.50, plus 40p postage. Council for Science and Society, 314 St Andrews Hill, London EC4."

London directors appeal for special treatment

The directors of the five Inner London polytechnics have made a plea for London to be treated as a special case within the system of redistributing money among the local education authorities.

The Committee of Directors of the London Polytechnics is backing the protest to the Government by the Inner London Education Authority which believes that London is being penalized because it has such high rateable values.

Next year ILEA should be "toppled up" the advanced further education, according to the ILEA's chief executive, Mr James Walmesley, both declined to comment on his resignation.

funding at its current value. But instead it has already decided to cut its contribution by £1m and divert £500,000 to non-advanced work.

The authority is protesting to the Government on the grounds that its contribution to the pool is 9.8 per cent of the national expenditure while its school population is only 4 per cent of the national total.

"This formula and the total absence of central government grants means that the ILEA has to pay twice - once for the high contribution to the pool and then to pay for the services without grant."

subsidy," said Mr Brian Stead, chairman of the finance sub-committee.

The ILEA contribution to the pool, as a result, in 1983-4 will rise by nearly 4 per cent while its share only goes up by 2 per cent.

Cleveland's county treasurer is to ask the Department of the Environment for exemption from penalties likely to be incurred through support of the Government's New Training Initiative, from next September.

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News in brief

Scots lecturers claim 13%

Scotland's tertiary lecturers have put in a salary claim for 13 per cent and called for a pay review to ensure there is "no further deterioration". They also want parity with university staff.

The staff side of the Scottish Joint Negotiating Committee, made up of further education lecturers and lecturers in colleges of education and central institutions, maintains there is a gap of at least 20 per cent between the current value of their salaries and the levels established by the Clegg Commission in 1979.

On the other side of the binary line, university technicians have lodged a claim for a "substantial" pay rise for 1983 without waiting for the other campus unions. The unions are to meet next week to finalize plans to submit claims simultaneously, and senior officials from the technicians' union do not think unity has been damaged by "jumping the gun".

OU hard sell

The Open University's centre for continuing education has commissioned Saatchi and Saatchi, the Conservative party's advertising agents in the last general election, to get Britain's industrial scientists working again.

The £100,000 account was agreed this week, for a May campaign promoting the OU's updating programme on science and technology in industry, and management education.

Poly first

Sheffield Polytechnic is to run the first public sector master of arts degree in women's studies. The course, which has just been given approval by the Council for National Academic Awards, will start in the autumn and will involve a strong cultural, social and historical input. About 20 students will have to complete seven terms of part-time study organized by the applied social studies and communications studies departments.

Charity chair

A chair of theological studies at Exeter University is to be funded by a local charity. The Saint Luke's College Foundation is to support the chair for at least seven years from 1984. A new BA honours course in theological studies begins in October next year.

Be prepared

Sir John Hinkakku, aged 67, is to retire 10 months early at the end of September 1983 as principal of Jesus College, Oxford, to prepare a series of lectures. Sir John, a former chairman of the Committee of Vice-Chancellors and Principals, will give the six Ford lectures on English landowners in the sixteenth and seventeenth century during 1984/85.

Move rejected

The Social Democratic Party's policy-making body rejected a move in general to propose two-year general degrees diplomas at the weekend.

Special offer

Sale shoppers in a Sheffield department store this week found free adult education advice among the cut-price offers, provided by the Sheffield Educational Information Service for Adults on their own second-floor counter. SEISA, a Manpower Services Commission sponsored organization, is supported by the city's educational providers.

Magic moment

St John's College, Oxford, has denied reports that it offered a conditional place to a student on the strength of a confounding trick performance during his interview for a place to read history. "It's obviously bunk. He was chosen on his merits," a spokesman said. "But it shows he has interesting hobbies and is a pretty confident chap."

Bill could help prisoners' lot

by Karen Gold

A Private Members Bill establishing the right of access to education for all prisoners was introduced in the House of Commons this week with support from members of all political parties.

The Education in Prisons Bill was introduced under the ten minute rule by MP Mr Harry Greenway (Cons, Ealing North), a member of the House of Commons Select Committee on Education, Science and Arts, supported by Labour, Social Democrat and Liberal MPs as well as the former leader of the house Mr Norman St John Stevens.

The Bill would oblige the Home Secretary and prison governors to make vocational and non-vocational education available in all prisons and to all prisoners, whether convicted or on remand, adult or under 21, and to explain to prisoners those educational opportunities.

It says: "All adult prisoners shall have the opportunity to take advantage of the educational facilities, either during or outside working

hours, and either through attendance at classes or through private work in their cells with tutorial support."

The governor would decide which prisoners were allowed the privilege of full-time or daytime study, but enough evening classes should be held to allow every prisoner attendance at one a week.

Remedial education would be a priority, with prisoners needing basic education allowed to make it their daytime work. Those aged between 16 and 21 would be required to participate in some education or training.

But both witnesses at the Select Committee's evidence session on prison education this week rejected legislation as a means of improving the situation. Mr Dennis Trevelyan, director general of the prison service, said local and remand prisons were the problem; education in the others was probably the best in the world. Legislation would tie the hands of prison governors, who had other considerations apart from education.

Mr John McCarthy, former governor of Wormwood Scrubs, who resigned from what he termed his "penal dustbin" last year, said that legislation was not the answer. The May committee's report on prisons, an example of official Parliamentary action - had not advanced education in prisons, he said.

The problems that arose over prison education, and over resistance to it by prison officers both overtly and in the difficulty of providing escorts to classes, were developed largely from poor industrial relations in prisons, he said.

"My experience is if you make prison staff feel they are important and worthwhile human beings they relax towards all other activities," he said. "The education that was started by Wormwood Scrubs was started by prison staff."

"If someone comes in and makes them feel... they are really unskilled turnkeys, he does get a reaction. I see that trained teachers have something to offer in a certain capacity. So do prison officers, and governors and probation officers."

Colleges 'need not combine'

by Patricia Santinelli

The Department of Education and Science has told Westhill and Newman voluntary colleges in Birmingham that it will no longer press for their merger.

Newman, a Roman Catholic college, was revived only last November by Sir Keith Joseph, who said they should seriously consider merging to ensure their viability.

Following a meeting between governors of Westhill, a free church college, and Mr William Wadsworth, under-secretary for higher education last week, the DES says it wants the colleges to retain their separate identities and ethos, but they should continue to collaborate and share resources.

The two colleges are affiliated to Birmingham University. They have been collaborating and running joint in-service training courses for some time. Recently they have been examining how to develop schemes for sharing initial teacher training work.

It is likely that the DES's change of plan stems from the difficulties inherent in merging a free church and a Catholic college.

Westhill College is a founder member of the Federation of Self-Chief Colleges. This encompasses a group of nine which represents religious, faiths and more than 30 countries.

Mr Alan Bamford, principal of the college said he was pleased that the two colleges could continue and extend their collaboration and sharing of resources.

Mr Tony Miller, the National Association for Teachers in Further and Higher Education representative at Newman College, welcomed the DES's decision as very positive.

"A formal merger would have entailed long discussions and negotiations and would have been complicated because of Westhill's position in the federation of colleges and Newman's relationship with the Catholic Church," he said.

Mature students hit by cuts

Mature university applicants are likely to suffer more than school-leavers from the spending cuts, according to the Joint Matriculation Board.

The board, which comprises Manchester, Liverpool, Leeds, Sheffield and Birmingham universities, has voiced its fears to the Standing Conference of University Entrance and the University Grants Committee.

It has asked both bodies to help in ways of protecting the interests of mature applicants.

In its annual report for 1981/82 the board says it has tried hard to make information readily available to potential applicants to its mature entry scheme. The scheme is for candidates over-21 who do not have formal qualifications. They can now get leaflets and forms direct from the universities rather than through the Universities Central Council on Admissions and other bodies.

The number of enquiries about mature entry went up from 2,000 in 1981 to more than 2,500 last year, and the board expects it to keep increasing. Despite this, however, the number of successful applicants was only one of the five universities to take more than 20 in 1982 compared with 20 in 1981.

The board's matriculation committee fears that the cutsback in university places will reduce proportionately the opportunities for mature entrants.

The JMB tests in English proved less popular than anticipated. Last year, total numbers taking the test fell by 31.3 per cent from 9,643 to 6,621. The total entry from native speakers was 1,873, a drop of 10 per cent in 1981.

Welsh merger talks reach stalemate

by Sandra Hempel

Talks on the merger of University College, Cardiff, and the University of Wales Institute of Science and Technology appear to have reached stalemate with each side waiting for the other to take the initiative.

The presidents of the two institutions, Sir Julian Hodge of the UWIST and Lord Elwyn-Jones of the UCC, have had talks to try to resolve the argument. In the meantime no date has been set for the next meeting of the joint planning committee which has not sat since before Christmas.

The UWIST council this week considered a letter from the UCC which set out its position on the merger and called for work on the

charter and statutes of the new institution to go ahead.

University College was expecting the UWIST to reply with proposals to take the talks further, but the UWIST has merely restated its conditions for the merger and wants the next move to come from the UCC.

The main stumbling block is the UWIST's insistence that work on the charter and statutes should stop while four areas of concern are settled.

These are: the distribution of academic resources in the new institution; the position of individual staff members; a plan for buildings and future financial stability.

But the UCC believes that any delay now on the charter and statutes would push the timing, already put back a year, beyond the latest

agreed date of August 1985. It finds this unacceptable. It claims that the UWIST could continue with the charter work without prejudicing its stand on the other issues.

In a letter to *The Times* in December, Dr Alfred Montz, vice-principal of the UCC, said that if the new college was to be created it had to be done quickly. "Present employees and prospective students can only suffer if uncertainty is prolonged," he said.

The UWIST registrar, Mr Frank Harris-Jones replied: "The work of a technological university depends on proper funding of supplies and materials to departments... The fulfilment of the desire to create something bold and imaginative is likely only the basis of proper planning now."

The talks broke down in early December after the UWIST's council backed its senate and expressed concern about the way the negotiations were going. It said it could see little possibility of finding acceptable merger terms in the near future. This followed an earlier row last summer over the size of the UCC's deficit.

Neither side was keen this week to discuss the precise involvement of the presidents, whose talks were described as informal.

Mr Harris-Jones said, however, that the UWIST awaited with interest any report or recommendations that might emerge from the meetings. "To mix metaphors, at the moment we appear to be on the horns of a dilemma," he said.

YOP staff training 'not up to standard'

by Patricia Santinelli

Training for staff on the Youth Opportunities Programme is totally inadequate and must be radically revised if the Youth Training Scheme is to be a success, says a critical report from the National Institute for Careers Education and Counselling.

The report, *Experience is not Enough*, by Edward Knsel of the institute, was commissioned by the Manpower Services Commission to examine in particular guidance and counselling provision. Its conclusions, the author says, are applicable to the whole of staff training.

Mr Knsel says that if it is viewed in the most favourable light, the existing MSC system of staff training can be described as meeting local conditions and requirements.

"Put less charitably, the overall structure of provision can be seen as being at best patchy. Within this picture the degree of attention given to individual guidance and support is even more limited and uneven, ranging from almost none to, notably in Yorkshire and Humberside and in the South-east, a modest amount largely dependent on outside resources," he says.

Mr Knsel adds that so far this approach to the development of YOP has made sense. But the crucial question is whether this structure can serve as a basis for a youth training

scheme which puts a greater stress on quality.

"There can be no doubt that the existing system which is so heavily reliant on discrete courses and so diverse in its quality from region to region is not adequate to the task as it stands," he says.

In his report he points to at least five areas where changes ought to be made immediately. One is for staff to be given greater opportunity for individual negotiation in deciding on a course. Too often, staff arrive without a clear idea of the purpose or objectives of the course for which they are enrolling.

Second, supervising Work Experience on Employers' Premises should be encompassed in a training programme. Up to now very few have participated. But the author believes this will be vital under YTS.

Third, the report says there has been too much reliance on discrete courses which agencies have not always been able to integrate into a comprehensive staff development policy. It recommends that more attention should be paid to staff development within schemes.

Finally, the report says there is a need to encourage and identify additional sources of specialist training expertise. One way might be through a system for accrediting competent staff trainers, it suggests.

Surrey sets up unique course

A unique course in applied sociology involving development economics and equipping graduates to learn about self-management and cooperative enterprises has been designed by Surrey University.

Surrey is offering 10 graduate places this autumn for a one year masters degree in producer cooperative development, said to be an area of growing world importance.

Sociology has been taught at Surrey since 1963 and has always concentrated in applying systematic research to "relevant" questions of social policy. Topics have included mental illness, the social services, race and ethnic relations, and education.

Surrey has more than 60 graduate sociology students.

"Relevance and the issues of 'applied' and 'useful' research have been widely debated by social scientists for the past 18 months. Last month Mr William Shelton,

under-secretary of state for education hinted that he preferred "useful" to "fundamental" research, though both were needed he said.

Professor Peter Abell, professor of sociology at Surrey, said the MSC course would combine elements of Yugoslav self-management theory with new ideas of industrial democracy and participation.

"We are always particularly at overseas students who we hope will go back and work in the cooperative movement which exists even in its embryonic form in most countries. But many people here are also very interested now."

The taught elements would include development economics, research in less developed countries, industrial sociology, and the theory and practice of industrial cooperatives. Students would also have to produce a 20,000-word dissertation.

Poly staff boycott Hendon racism inquiry

Lecturers at Kilburn Polytechnic are boycotting a local inquiry set up by their union to investigate allegations of racism among cadets at Hendon Police school.

The polytechnic's branch of the National Association of Teachers in Further and Higher Education is refusing to cooperate because terms of reference do not include a demand for the reinstatement of Mr John Fernandez, the sociology lecturer barred from the school after he disclosed essays showing evidence of racist tendencies among many cadets in a multi-cultural course.

National union leaders are trying to find a solution to the dispute by

after talks between Labour leaders of the council and Mr Peter Dawson, Natfhe's general secretary, a threat by the authority to withdraw 32 other staff seconded to the school still stands.

Brent Council has said that if Mr Fernandez is not reinstated, it will consider pulling out other staff, but Natfhe is faced with the task of balancing seeming to compromise its anti-racist stance by seeking to protect its interests as well as those of Mr Fernandez.

In discussions Mr Dawson emphasised the importance of Brent reinstating a stake in police education.

The authority has warned the head



Engineers at Lancaster University saw the fruits of a research project when a local company, Dorman Smith Switcheer, of Preston, presented them with a measuring instrument they helped to develop. The instrument, known as the LMPSC, measures short-circuit currents and will enable companies to comply with new safety regulations. Pictured (from left to right) are Dr Michael Anson and Mr John Burch, of the department of engineering, and Mr Alan Kidd and Mr David Hopkins, of Dorman Smith.

Poly candidates shortlisted

A shortlist of six names has been drawn up for the post of principal of Sheffield Polytechnic after the education authority decided to re-advertise because it failed to attract applicants of high enough calibre.

Three candidates remain on the shortlist from the original draw to find a replacement for Dr George Tolley who has taken up the post of director of the Open Tech initiative. They are Mr Douglas Thacker, the polytechnic's deputy principal, Mr John Stoddart, director of Hull College of Higher Education and a former member of the poly's staff, and Professor David Weir, Glasgow University's business school.

After re-advertising, a further three names were added which are a director of a Worcester engineering company, Mr John Osola of Redman Heenan International; Dr John Earls, assistant principal for academic and student affairs at the polytechnic; and Professor Michael Stephens, of the department of adult education at Nottingham University.

When the post was being re-advertised, Councillor Peter Horton, chairman of the education committee, said that they had been disappointed by the number of applicants who applied and their calibre.

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North American news

Penalties for draft dodgers

The Department of Education is pressing ahead with plans to withhold grants and loans from students who have failed to register with the military selective service system, despite widespread opposition from student groups and some colleges.

Mr Terrell Bell, the Education Secretary, this month published detailed regulations for enforcing the rules and warned that the department intended to carry out the wishes of Congress. "The message is simple: no registration, no money," he added.

Under the rules, students would have to submit with their application for federal grants or loans a form confirming that they had registered with the Selective Service System, and submit their registration papers in their college before receiving any financial assistance.

The United States has no military conscription at present but registration for selective service is designed to enable a swift call-up in the event of a national emergency.

Several student groups have criticized the new rules and promised to seek repeal of the legislation. They are the United States Student Association, the National Coalition of Independent College and University Students and the National Organization of Black University and College Students.

The rules have also been criticized by a number of universities and colleges, some of which have promised to compensate any students who are denied federal financial assistance because of a failure to register.

In a typical reaction, Mr Olin Robinson, president of Middlebury College in Vermont, said it was wrong to expect colleges to verify whether students had in fact registered for selective service.

He added: "Financial aid officers should not become agents of the federal government. Their primary responsibility is to assist students in a relationship that involves sharing confidential information, and their offices should not be used as vehicles for accomplishing disciplinary objectives unrelated to their major functions."

The rules have also been criticized on other grounds. Many colleges argue that because poorer students are more dependent on federal assistance, the new law will discriminate against a particular segment of the population: young males, who need government help to pay their way through college.

Students able to pay their own college fees will not be subjected to the same federal scrutiny or penalties as those who are not. He criticized the absence of any provisions in the new regulations for students whose refusal to register was based on ethical objections.

Reagan cashes in on Boston's high technology boom

from E. Patrick McQuaid

CAMBRIDGE, Mass. In a footnote to his State of the Union address last week Ronald Reagan took his optimism to Massachusetts where record unemployment runs counter to the region's booming high technology trade.

Ironically, the president made a symbolic visit to a computer assembly plant in Roxbury - Boston's poorest black ghetto - which simply would not have existed had Mr Reagan succeeded in his efforts to dismantle the federal programmes responsible for attracting such development.

Digital Equipment Corporation, one of the United States' largest computer manufacturers, was able to invest \$3m to build the plant largely through industrial revenue bonds which give private investors federal tax relief. It is programme the president attempted to shelve last year.

The federal economic development administration contributed \$581,000 to prepare the site and awarded Boston's Community Development Corporation another \$75,000 to help lure business to the new industrial park. The White House attempted to stop this programme as well and continues to do so. If successful Mr Reagan would withdraw some \$2.7m set aside for further development at the Roxbury project.

Providing jobs and employees to attract high tech companies into Boston was a campaign promise Mr Reagan helped former governor Michael Dukakis to power recently. His previous administration was re-

Fewer freshers aim to be teachers

from Peter David

WASHINGTON Today's new students are less interested in becoming school teachers than any cohort of new students in recent years, according to an annual survey of entering students published by the American Council on Education and the University of California at Los Angeles.

Since 1966, when 21.7 per cent of new students were planning careers as teachers, student interest has declined steadily to the point where only 4.7 per cent of the 1982 freshmen aspire to teaching careers.

"When these trends are viewed in the light of other recent data about prospective schoolteachers, the outlook for our educational system is grim," said Professor Alexander Astin, director of the survey.

"Since recent studies of college admissions tests show that education majors have much weaker academic skills than students majoring in most other fields, it appears that we are headed for a crisis not only in the quantity but also in the quality of

persons who want to teach in our elementary and secondary schools."

Higher education, too, has declined in popularity as a career destination, the report says. Since 1966 the proportion of new students planning to become university teachers has fallen from 1.8 to 0.2 per cent. The proportion aiming to become scientific researchers has fallen from 3.5 to 1.5 per cent.

The career choice category that has shown by far the largest gain in popularity during the same period is business, which increased from 11.6 per cent in 1966 to 20.2 per cent in 1982.

Other careers showing dramatic increases in popularity include computing (from 2.9 per cent in 1977 to 8.8 per cent in 1982) and engineering (from 4.7 in 1974 to 12 per cent in 1982). The 1982 survey is based on questionnaires completed by more than a quarter of a million new students entering a sample of 492 colleges and universities. In the 17 years since the annual survey began, more than five million students and 1,200 institutions have partici-

pated.

Consistent with the trends in career choices, the attitudes and values of new students in 1982 showed more materialism and less social concern and altruism than any previous entering class, the survey found.

Being very well off financially has endorsed as a "very important" goal by more than two thirds of the 1982 students compared with 65.2 per cent last year and 43.5 per cent in 1967. The goal of "developing a meaningful philosophy of life" had plummeted to 46.7 per cent compared with 49 per cent last year and 82.9 per cent in 1967.

"This continuing pattern of increasing materialism and declining altruism and idealism may in part be a byproduct of the women's movement since the women have shown much larger changes in career interests and values than have the men," Dr Astin commented. "Nevertheless, since men's values and plans have also changed in similar directions, this would appear to be a

general societal phenomenon."

Changes in student attitudes on other issues show a mixture of liberal and conservative trends. On the liberal side there was increased support for a national health care plan, greater taxation of the wealthy, legalization of abortion and busing to achieve racial desegregation.

On the conservative side there was a continuing decline in the support for abolition of the death penalty, legalization of marijuana and preferential treatment for disadvantaged students in college admissions.

Political self-labels in 1982 showed a reversal of recent conservative trends with the proportion of "liberal" or "far left" students increasing slightly and those describing themselves as "conservative" or "far right" falling. The majority of students described themselves as "middle-of-the-road." New students in 1982 appeared to be more dependent on their parents for financial help. The percentage whose parents contributed at least \$2,000 to their college expenses increased.

Californian students protest at extra \$100

from Charlotte Beyers

PALO ALTO University of California students are protesting at the board of regents' decision to impose an extra fee of \$100 dollars for the spring quarter.

About 150 students from Santa Barbara, San Diego and Santa Cruz as well as the Berkeley campus chanted protests like "education is our right - be prepared for a fight" and carried signs saying "education is a right, not a privilege," as the regents met in San Francisco to vote on the surcharge. Governor Deuk Mejian sat impassively as he listened to the students.

The increase was prompted by a \$23m cut in state funds imposed on the university. The new governor has recommended a permanent increase in UC's fees of at least \$150 a year to begin in the 1983-84 academic year.

Alex Holl, vice president of the Student Body Council of Presidents, insisted: "We must have a state tax increase that will not jeopardize students and the poor." He quoted a recent survey of 1,440 graduate students in which 206 said they would not have gone to Berkeley if they had known about the university's financial problem.

Jay Weiss, student president of the University of California at Santa Barbara, said: "We don't see violence as a way to change the situation. We are going to win our fees at Santa Barbara and hopefully on all nine campuses we represent a new wave of students. We are much more sophisticated than those who protested in the 1960s."

David Saxton, University of California president, sympathized with the irate students. "The net effect of the government's actions is to make it increasingly difficult for graduate students to attend the university. Graduate students are most in need of financial aid. Many are married and have no means of support. We will cut students off if financial aid funds turn out to be inadequate. Washington has treated this group of students most harshly."

Undergraduates are currently paying \$390 a quarter in registrations and education fees with an estimated annual cost of \$5,628 per year for dormitory room and board. The extra \$100 is called a surcharge and is allegedly a one-off payment.

The surcharge will generate \$12m, \$2m of which will be used for emergency financial aid for qualified students. The other \$10m will help make up the university's budget deficit.

Mr Saxton noted that the main burden will fall in students from middle income families with annual incomes of between \$25,000 and \$35,000 who are ineligible for financial aid.

The day before, on the Berkeley campus, 95 students were arrested during a peaceful protest at the university's affiliations with the Lawrence Livermore laboratory and the Los Alamos laboratory in New Mexico, where nuclear weapons are designed.

The demonstrators, wearing red armbands to designate those who would be arrested, sat peacefully in front of university hall attempting to prevent employees from entering the building. The arrests began as the employees arrived.

Black colleges keep running

from Peter Mauger

CHANGES IN China's university enrolment system were announced last week by the vice-minister of education, Huang Xinhai, at a conference in Kunming, Yunnan Province. To encourage graduates to work in the countryside, where 80 per cent of the population live, candidates who express willingness to work in rural areas in the fields of agriculture, forestry, medicine and teaching will be admitted with lower entrance marks. Preference will also be given to students from rural areas who want to return to their native places after graduation.

Mr Huang urged the conference members - representatives of provincial education departments, universities and colleges, high schools and state council ministries and commissions - to pay more attention to the needs of society when planning courses. There should be more contact, he said, between employing units and universities to prevent a mismatch between higher education courses and jobs essential for China's modernization programme.

A recent survey at Shanghai's Jiaotong University showed that some 20 per cent of graduates had been assigned to jobs unrelated to their studies. The ministry is sponsoring a pilot scheme this year in four main cities of cooperation between institutions for higher education and employer units which, it is hoped, will help universities and colleges to predict the needs of society more accurately and make appropriate adjustments to their courses.

It was also announced at the conference that there would be a 10 per cent increase in university entrance places this autumn, to 348,000 enrolled by military academies. Because of the national policy of restructuring secondary education by reducing the number of senior high schools and turning them into vocational and technical schools, there will be 680,000 fewer high school leavers this year. This will reduce the imbalance between supply and demand - last year 1,860,000 candidates competed for 314,000 places.

At the same time the incentives to students from rural areas will do something to soften the complaint that places in higher education are exclusively reserved for youngsters from the big cities. In this connection the choice of the conference centre is significant. For the first time an important educational conference has been held not in Peking but in the capital city of a distant, rural and poor province.

The Australian government is to spend an extra DL\$3.27m (26.5m) this year to provide more courses for migrants at colleges of technical and further education.

The federal minister for education, Senator Peter Baume, said the federal government was spending more than DL\$100m on teaching English as a second language, not all of it in Australia.

The department of education, for instance, produced an elementary radio course for Indonesia and was planning an intermediate course in English for China, which would begin transmission next year. Plans were also advanced to establish an Australian language centre in Jakarta.

Senator Baume said the extra money for TAFE colleges was to expand the programme to help migrants develop an adequate command of English for the workplace and to have their overseas qualifications recognized.

Senator Baume said there were 600,000 children in Australian schools - one to five - who did not come from an Anglo-Celtic background. "In a society such as ours which espouses equality of opportunity, proficiency in English is assumed to be essential if one is to compete with other Australians for social, financial and educational rewards," the minister said.

He said the spending on child migrant education had risen from DL\$1.84m to DL\$6.5m since 1971. Last year, the government announced that 15 per cent of the TAFE particular purpose recurrent grants would be earmarked for advanced English language instruction for migrants. However, technical and further education groups attacked the decision, claiming there was no evidence it would achieve its desired objective.

The interests of migrants should not be played off against existing programmes and full additional funding should have been provided, a spokesman for one of the groups said. Although nearly a million students are enrolled in various TAFE courses, this year they will receive only 7 per cent of the government's total expenditure on education.



The Rev. Jesse Jackson, recruited by black college presidents.

Black colleges keep running

Black colleges have decided against carrying out a threat to withdraw from the National Collegiate Athletic Association in protest against new rules which would prevent academically substandard students from competing in big-time university sports matches.

Several colleges had threatened to pull out of the NCAA - the governing body for college sports - following its decision last month to insist that first year students, who wanted to compete would in future have to have reached a predetermined score on the Scholastic Aptitude Test taken by school-leavers.

At a meeting at Southern University in Louisiana around 20 black college presidents and civil rights leaders said they strongly opposed the new regulation and try to resist within the NCAA and try to alter the rule before it came into effect in 1986.

According to black college presidents, the level at which the SAT minimum has been set - a combined score of 700 on the maths and verbal tests - is too high to give black students a fair chance to participate in first-division sports.

According to the College Board, which administers the SAT, nearly 60 per cent of all blacks who took the test last fall had a combined score of 700 or less. For white students the proportion is 14 per cent.

At their meeting in Louisiana, black presidents said they would remain in the NCAA to take advantage of the three-year period before the new rules came into effect. But they anger at the decision remains undiminished and they have enlisted the support of leading civil rights campaigners, including the Rev Jesse Jackson, to spearhead a drive for changing the rules.

The American Council on Education, which devised the new rule and plotted it through the NCAA, may be prepared to consider modifying the SAT requirements.

Overseas news

Greece to abolish the chair system

by Henry Wassner

The new law in Greece governing higher education abolishes the European chair system and establishes a sector, similar to the American department which is to be independent in structure, function and administration and includes a related group of subjects.

It also establishes a national academy of letters and science to ensure that the selection of teaching staff is fairer and to coordinate research and instruction. A national council of higher education is intended to be a structure for social control and is composed of the minister and representatives of academic bodies and of political parties.

Students representatives are to participate in the collective body of the members of the sector on an equal basis. Teaching methods and the testing of learning are to be radically changed. Scientific method and the solution of problems are to replace mechanical memorizing of texts. Marking is to be based not on examinations, but on evaluation of the student's progress in the academic semester, again an approximation of the American system.

The law is in accord with Papan-dreu's platform and speeches, but it is not clear whether it addresses the perennial problems of Greek universities.

The Greek universities do not produce their own professors or researchers. That role has been played by foreign universities, where Greeks go to do their research and take advanced degrees.

There has been little organized research in postgraduate studies. Only 0.27 per cent of the gross national product in 1977 was devoted to university research as compared to 1-1.5 per cent in other Common Market countries. As recently as 1980 only 2 per cent of the budget for the University of Athens was devoted to research.

While the class composition of Greek higher education shows a degree of class selection much lower than in the industrialized countries of western Europe, there is a high level of attrition. More than half the students who enter secondary education never graduate; 50 per cent do not even reach the fourth year out of six gymnasium years. The low degree of class selection is supported by data

China to change enrolment methods

from Peter Mauger

CHANGES IN China's university enrolment system were announced last week by the vice-minister of education, Huang Xinhai, at a conference in Kunming, Yunnan Province. To encourage graduates to work in the countryside, where 80 per cent of the population live, candidates who express willingness to work in rural areas in the fields of agriculture, forestry, medicine and teaching will be admitted with lower entrance marks. Preference will also be given to students from rural areas who want to return to their native places after graduation.

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Australia spends more on courses for migrants

from Geoff Masien

MELBOURNE The Australian government is to spend an extra DL\$3.27m (26.5m) this year to provide more courses for migrants at colleges of technical and further education.

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With the symbolic cutting of barbed wire, playwright Tom Stoppard opens an exhibition at the House of Commons mounted by the Student and Academic Campaign for Soviet Jewry.

Academic sent to Siberia

from Peter Mauger

A Moscow mathematician, Boris Kanevsky, has been sentenced to five years' exile in Siberia for slandering the state after collecting information relating to anti-Semitic prejudice in the mathematics entrance examinations of Moscow University.

His associate in this project, Valery Senderov, is still in detention awaiting trial. An 18-year-old student, Ilya Gelsler, who had acted as their assistant, was given a three-year suspended sentence.

An anti-Semitic bias in Soviet mathematics has been observable for several years. Indeed the London Mathematical Society, which publishes, as *Russian Mathematical Surveys*, translations of selected articles from the Soviet Academy of Sciences' *Uspekhi Matematicheskii Nauk*, has on at least one occasion found itself considerably embarrassed by the implications of the original text.

In 1976, while still a professor at the Keldysh State University, and a Communist Party member in good standing, Dr Grigori Freiman produced a scathing expose of the attempts by a relatively small - but politically influential - group of Moscow mathematicians to produce a school of Soviet mathematics that would be *Judeofree*.

This essay, which reached the West in 1978, and which was subsequently published with an afterword by Dr Andrei Sakharov, was widely circulated through the *samizdat* network. When Dr Freiman finally decided to emigrate to Israel, his work

was continued, by Senderov and Kanevsky.

Unlike Freiman, who was able to substantiate his account with transcript material from faculty meetings and committees, Kanevsky and Senderov, who concentrated only on the university admissions problem, dealt mainly in statistics.

Their numerical material for the entrance examinations of 1979, 1980 and 1981 establishes clearly that whereas non-Jewish applicants on an average score in the entrance examinations (both oral and written) marks comparable to those obtained at school, for Jewish or half-Jewish applicants, the examination marks, particularly the oral examination are for lower and frequently do not even reach pass level. Yet many of these applicants had scored high places, or won major prizes, in the annual "mathematics Olympiads" - a nationwide mathematics competition for the especially gifted.

Such anecdotal material, however, as is included in the Senderov-Kanevsky report reveals a grim picture of distortion (the time of the oral examination - being entered wrongly on the examination card, to prevent an appeal, which must be lodged within an hour of the candidate's finishing), "misprints" of the question set to the candidate (which considerably increased the level of difficulty) and callous hints to protesting Jewish parents that their child's case might be reconsidered - if they themselves dropped dead.

Turkish university students could be forced to take courses in physical education. Council chief Professor Hasan Dogramaci has said that plans are in hand to provide compulsory lessons in either jae (such as music and painting) or PE.

Lecturers face expulsion

from Benny Morris

JERUSALEM

The West Bank military government this week ordered four foreign lecturers in Hebron to stop teaching in a new confrontation between West Bank universities and the Israeli Army in this occupied area.

Major Baruch Nagor, deputy military governor of Hebron, ordered the four lecturers who make up the English department at Hebron Islamic College to stop teaching because they do not have valid work permits. The lecturers are Jeremy Jones, Tim Stewart and Terry Stratton from England, and Ross Birmingham from Ireland. They are guest lecturers at the college.

Dr Jones, who is head of the English department, said that as far as he knew the university had applied for work permits on behalf of all foreign faculty members. But he confirmed that in all probability none of them would sign the anti-PLO undertaking which is included in the application form for a permit.

Last summer and autumn the military government expelled 22 foreign faculty members in West Bank universities after they refused to sign undertakings not to support the PLO in any way. Later the military authorities proposed a compromise whereby the lecturers need not sign a separate undertaking but that disassociation from the PLO would be one of the conditions on the application form for work permits.

The foreign lecturers at Birzeit University, Al-Najah in Nablus, and Bethlehem universities have refused the offered compromise and have so far refrained from submitting new applications for the permit.

The Israeli requirement was later condemned by the US State department and the secretary of state, George Shultz, as an infringement of academic freedom and comparable to the loyalty oaths required by American institutions during the 1950 McCarthyite purges.

This week the Israeli security forces detained a young physics lecturer at Al-Najah and roadblocks were installed around the campus which has been closed for the past two weeks because of unrest caused partly by the confrontation over the foreign lecturers.

A university spokesman said that no reason had been provided for the arrest of the lecturer. The spokesman added that the army was still holding nine members of the student council, who were detained a fortnight ago after a rally on campus marking the anniversary of the founding of the Falah organization.

Applications fall for third year

This year has seen a substantial fall for the third year running in the number of Turks applying for university places as young people seem to be taking a new attitude towards higher education.

This year 360,000 have applied to take part in the entrance exams as opposed to 408,000 last year and 467,000 three years ago. This comes at a time when the number of places for new entrants is increasing. The universities are planning for an intake of 150,000 this year, compared to 120,000 last year and around 100,000 previously.

One reason for the decline is a new regulation limiting the number of attempts an individual may make at passing the entrance exam but this is believed to account for only half of the 12 per cent drop in prospective students. The decline remains surprising, especially as the population of 17-19-year-olds in Turkey is increasing steadily.

Turkish university students could be forced to take courses in physical education. Council chief Professor Hasan Dogramaci has said that plans are in hand to provide compulsory lessons in either jae (such as music and painting) or PE.

THES correspondents take a look at the political scene in Latin America

Mobilizing against the military

Perhaps the strongest impressions about Latin American universities are based on student activism. Critics have decried disorder and radicalism. Others have praised the students' progressive role in promoting just societies. However, stereotyped images of extreme politicization are misleading, more so today than 10 or 20 years ago.

At least three major factors warrant a more sober view of both the extent and the impact of Latin American student politics. One is that exaggerated impressions have been drawn from the events of the late 1960s and early 1970s, when student activity peaked. The other two factors concern important changes since the 1960s. Several nations have seen the advent of military governments that harshly repress student activity. Even more nations have seen the growth of private educational institutions offering themselves as "democratic" alternatives to the embattled public universities.

First, there is the legacy of the peak activist period. That period seemed to confirm Latin America, for better or worse, as the world's foremost centre of politicized universities. However, even during the peak period of activism, in-depth studies disproved several stereotypes. In fact, the vast majority of students were not activists, nor extreme radicals. This was especially true in the academically demanding faculties, such as medicine, engineering, and exact sciences. Although student leaders were as likely to spring from these faculties as from the social sciences and humanities, rank-and-file activists were not. Furthermore, despite notable exceptions, Latin American students were not typically "professional students" working around the university well past their youth in order to perpetuate radical activities. Most important, evidence did not sustain the view that student activists generally played decisive roles in depressing unpopular national leaders or overthrowing national policies to their taste.

Other conventional notions have stood up better under scrutiny. For example, students are generally more active in Latin America than elsewhere, where the dominant tendency is leftist or radical, and severe internal strife is the dominant theme in many institutions. But even much of what was characteristic a short time ago is less characteristic today. Latin America hardly stands alone for having experienced a temporary explosion in

student activism during the 1960s and early 1970s. West Europe and the United States also underwent rather sudden increases followed by normalization.

The increase in Latin American student activity and political impact stems largely from factors well beyond the control of student activists or indeed the mass of students. Most important has been the move toward hostile military regimes. Principal cases include Brazil in 1964, Chile and Uruguay in 1973, Argentina in 1976, and to a lesser extent, Peru in 1968.

Brazil in the late 1960s and early 1970s, and the other southern cone nations (Chile, Uruguay, Argentina) have dealt with student politics more repressively since their military takeovers than all but a few previous governments this century. Venerable student unions have been banned.

In their place, new organizations are created under close government and university supervision. They are expected to engage in academic and cultural affairs only; politics is either forbidden or limited to endorsements of official policy. Similarly, tight controls are placed on student media, demonstrations, and freedom of speech within and beyond the classroom.

Military rule in the southern cone has had an especially powerful impact on Latin American student activism for several reasons. Beyond holding a major share of Latin America's population, the cone holds an even larger share of its university population (roughly 55 per cent in Argentina, Brazil, Chile, and Uruguay). This is because of the unusual level of development, found in nations like Argentina and Uruguay.

Thus, new governments have transformed student politics in some of the key Latin American nations. In several other nations, where government coercion has not been nearly so decisive, important depoliticization has been achieved through market mechanisms. Of course, the private institutions are also "political" in that they pursue their own, generally depoliticized, political values; lack of student activism.

Private institutions have risen and grown rapidly. In 1960, the private sector captured roughly 15 per cent of total enrolments. In 1965 the figure was 20 per cent. But by 1970 the figure was 30 per cent, moving near 35 per cent by 1975.

The rise of the hit-and-run philosopher

A short, middle-aged former philosophy lecturer at a small provincial university, who never makes public appearances, was voted Peru's "Man of the Year" earlier this month by two of the country's main mass-circulation magazines.

The rise of Abimael Guzmán Reynoso has been meteoric, but the details of his recent career remain obscure. Since the late 1970s, under the *non-doguerre* of Conrado Gonzalo, he has been the absolute chief of a ruthless guerrilla movement which has spread like wildfire throughout Peru, and which the elected government in Lima has so far been powerless to halt. The heartland of the movement, which is known as Sendero Luminoso (Shining Path) is the small, colonial city of Ayacucho, in the south-central Andes, where Guzmán was once a specialist in pre-Socratic philosophy at the local state university. A career as a left-wing militant stretching back more than 20 years shows that he has always been a believer in combining theory and practice. But his rise to his current clandestine eminence only began when he succeeded in turning the ancient University of San Cristóbal de Huamanga into a rigidly-controlled political base.

This happened in the wake of the Sino-Soviet split, which had profound repercussions in the Peruvian left. In 1964, Guzmán was head of the Ayacucho branch of the Peruvian Communist Party (PCP), 6,000 students and a big following among the country

During the bitter schism in the party that reflected events in Moscow and Peking, Guzmán was one of the founders of a pro-Chinese tendency known as Sendero Luminoso, which to this day claims to be the only true Communist Party in Peru.

Guzmán set about building up his support almost

exclusively in the university, among both staff and students. San Cristóbal de Huamanga is one of the oldest in Peru, founded by the Spaniards in 1677. Despite its small size, it enjoys a disproportionately large influence in the isolated, backward and poverty-stricken region.

It is both a big employer—up to one seventh of the labour force in a town of 80,000 inhabitants—and the leader of local cultural and intellectual life. It specializes in science and agronomy, untoured to the needs of the local economy, which is dominated by mining and stock-raising. Many of the students come from poor peasant families in the region.

Sendero Luminoso succeeded in defeating its rivals for control of the university during the vicious 1970s. Guzmán evolved a highly leftist theory, whereby the university was the only bastion against the encroaching "fascism" of "corporatism" of the corporatism was then in power. He argued that this oligarchy of landowners and bankers to maintain their supremacy, under a political and social system that had first been analysed in the 1920s by the Peruvian socialist thinker, and founder of the first Peruvian communist party, José Carlos Mariátegui.

Guzmán set out to rebuild Mariátegui's party, following the shining path traced by Mariátegui 50 years earlier. He maintained that there had been no substantial changes in Peruvian society during that period.

By 1977, the first stage of the "construction of the party" had been completed. The vanguard of university-trained cadres were ready to move out of Ayacucho and begin the "prolonged people's war from the countryside to the towns" which Guzmán, following Mao Tse-tung, believed was the only road



Bolivian students carry away the victim of a military coup

While there are several related reasons for this shift from public to private institutions, the escape from student activism is crucial. The reality of extraordinary activism in the public universities is subordinate to the widespread perception of even greater and more radical activity. Thus, students (or their parents) interested in order, safety, academics, first, job-relevant training, or any other related "conservative" values, have rejected the public sector.

Private institutions have been created in order to offer depoliticized alternatives and have grown largely by fulfilling that goal. Unlike most public universities, private universities (especially the business-oriented ones) do not allow student participation on governing bodies. More importantly still, they do not tolerate the organizations, demonstrations, and disruptions found in the public sector.

The fundamental degree to which the private sector defies stereotypes of Latin American student activism can be seen in nation after nation. One need only compare, for example, the public national universities in Bolivia, Colombia, Costa Rica, Guatemala, Mexico, or Venezuela. More so, to the Catholic, Los Andes, Autonómico, Francisco Marroquín, Andahuac, or Metropolitana universities, respectively. The only national exceptions occur in those very few cases where there is no private sector and perhaps in a few of the nations where recent military rule has repressed activism in public universities so much that private-public differences

diminish in importance.

All this—the true assessment of student activism at its peak, the rise of repressive military governments, and the extraordinary growth of private institutions—means that Latin American student activism is much less widespread than generally supposed. It does not mean, however, that such activism is minimal in either scope or impact.

First, the recent decline in student activism is a decline from history's peak; it is not a decline to an historic nadir, or even to the pre-1960s level. Second, private growth should not obscure the fact that two thirds of total enrolments remain in the public sector. Indeed the public sector has grown more in absolute numbers than the private sector.

Third, there is no clear deterministic trend toward the sort of military rule that has so thwarted student activism in some nations. Whatever the fate of Argentina and Chile, no similar transformation has befallen national or student politics in nations such as Costa Rica, Mexico, and Venezuela.

Such changes in national politics have helped to reactivate student politics. For although students in the non-dictatorial nations are rarely the less romantic or vitriolic accounts, they do often constitute one important force among others. Moreover, whatever role they play in national politics, they do indeed play crucial roles in higher education policy.

Daniel Levy

Return of the death squads

WORLDWIDE

During the last few years San Carlos University in Guatemala has been the scene of some of Central America's worst atrocities. Following the ousting of President Lucas García by a military coup in March last year things improved and an air of normality returned to the campus. But late last year the death squads came back.

Under President Lucas the military had identified the university as a breeding ground for left-wing "subversion" and meted out unprecedented repression to squash opposition movements and dissent. In four years nearly 100 lecturers, a further 100 professionals who had once worked in the university and more than 250 students disappeared or were killed. A series of rectorates were forced into exile or assassinated and in mid-1981 lecturers and administrators formed a university in exile.

Last March a coup by young officers disposed of Lucas and replaced him with General Efraín Ríos Montt, a moderate career soldier who belongs to a bizarre evangelical sect and believes he has been directly mandated by God. In the Indian highlands—where bitter war with left-wing guerrillas still rages—the army's systematic repression continued. In the cities Ríos Montt presided over a dramatic reduction in political violence, dismantling some corrupt police units and apparently reining in freelance police death squads.

At the university a moderate academic Dr Eduardo Meyer was elected rector in June last year and promised to defend the university's autonomy, which had become severely threatened. Nowhere was the change in atmosphere in Guatemala following President Ríos Montt's coup more apparent than at San Carlos.

Now it appears the death squads are back on duty. Since September last year at least three lecturers and 25 students have been abducted. In early October the rector of the university extension college in the north of the country, Raúl Rumeo Rodríguez, was assassinated. Departments in controversial areas like sociology and politics are either understaffed or suffer a rapid turnover, as an atmosphere of terror returns.

Last week Dr Meyer appealed to the authorities to investigate the whereabouts of five students who the security forces have accused of belonging to the People in Arms Organization guerrilla group.

One recent victim of the death squads was a 35-year-old history lecturer Rolando Enrique Medina, kidnapped on September 28 last year and not heard from since. His wife Margarita said that Medina had been kidnapped in front of her eyes.

The government claims such disappearances are the work of the far left and are designed to discredit them. It argues the para-military right-wing groups responsible, for all unexplained deaths under the previous regime have discredited.

Few people in Guatemala City believe them. No one really doubts that the brand new microbuses and used by the killers are government vehicles and that the killing is directed by the army military intelligence department, G-2.

During the relative liberalization of the immediate post-coup period the university again became a centre of dissent. In June the students' association organized a rare public demonstration against disappearances in rural areas. This protest stuck in the throat of the conservative hard-liners who still, despite Ríos Montt's moderate rhetoric, rule the roost in the Guatemalan army. Observers believe the new wave of killings is the result.

Colin Harding

Richard Lapper



Student grant demonstrations: a legitimate reason for spending money, advises NUS...

When Sir Keith Joseph told the Conservative Party Conference there was "unfinished business" on the student union agenda, he was widely interpreted as issuing a warning that something would be done to curtail spending on non-educational issues.

Student union donations to political or trade union causes and spending on coach hire to take students to demonstrations are proving a valuable weapon with which right-wing opponents of compulsory union membership are pressing their case with ministers, the press and public.

The signs are that the Government is ready to act—most probably by a court case later this year against Bradford University union over allegations of *ultra vires* payments amounting to £6,000 in little over a year largely on coaches to ferry students to demonstrations on nuclear disarmament and unemployment demonstrations.

An internal university report now in the hands of the Department of Education and Science, said to conclude that the 29 payments were properly made according to the union's constitution, was unlikely to cut much ice with ministers keen to bring student unions to heel.

The Federation of Conservative Students, which was instrumental in bringing the Bradford allegations to the attention of Government law officers, has used *ultra vires* as a key part of its campaign for voluntary union membership.

And the right-wing Freedom Association, which is compiling its own dossier on *ultra vires* activities, sees action against student unions as part



Dr Walford: a full-time job

One of the wider misconceptions about social scientists is that they know little about statistics. On the contrary, there are signs that sampling and quantification are increasingly in vogue. A visit to the Data Archive based at Essex University, well illustrates that social sciences can be as "scientific" as other subject areas.

The archive has almost finished acquiring its largest and probably most important survey, the 1981 Census. The last batch of 160 computer tapes arrive this month from the Office of Population Censuses and Surveys. In a mammoth operation they are being copied for storage and distribution to six computer centres based at London, Manchester, Bath, Newcastle, Edinburgh and Aberdeen universities. Each tape is 2,400 feet long, at a density of about 1,600 "bits" per inch. Most counties got on to one tape, although inner and outer London had four tapes each, and Strathclyde, five tapes.

These tapes are now accessible to researchers through the archive and the regional computer bases, and provide a wealth of social, economic, and demographic statistics that could keep academics busy for years. There is also ample scope for comparative analysis, for example using the 1966 and 1971 censuses already in the archive.

In all it has been a good scoop for the Social Science Research Council, which provides two thirds of the £170,000 annual funding for the archive. The rest comes from Essex University. Negotiations with the OPCS dragged from 1981 through to spring last year when the SSRC landed the deal for about £150,000. All academics using the census now do so free, providing it is not for commercial reasons. For that users must go direct to the OPCS or one of the London agencies holding the ma-

Why NUS is being ultra careful

The Government may soon act on *ultra vires* payments by student unions. David Jobbins reports



... unlike the Grunwick dispute which provided the climate for the present problems

Student union leaders at Kent University also decided against making a £75 donation to the health workers' strike fund after being alerted to the prospect of intervention at a similar level.

FCS is said to be collecting information on other *ultra vires* allegations involving Leeds and the University of East Anglia. "If enough cases are built up on *ultra vires* payments someone will challenge NUS affiliation," commented Mr Brian Monteith, chairman of FCS.

A case which may eventually point the way is proceeding in Scotland over a challenge to Edinburgh students' association's support for a demonstration against the Corrie abortion amendment bill.

A student at Edinburgh, supported by the Society for the Protection of the Unborn Child, was granted an interim interdict which was challenged by the students' association. In the Sheriff's Court last year it was made clear that while abortion was an issue of interest to students, the Corrie amendment affected women in general and not students in particular. This ruling is being taken to a higher court by the students' association.

One aspect of the Edinburgh case of wider interest is that the sheriff rejected claims that the individual student bringing the case had no standing with the court.

But another avenue which NUS feels appropriate is an approach to the visitor—in many cases the Queen.

The courts have traditionally held that disputes within universities are

not within their jurisdiction until all internal procedures have been exhausted, and have referred a range of issues to visitors for adjudication. Many NUS leaders feel that the *ultra vires* question is coming to the fore as a natural result of a generally left student movement coming into conflict over a wide range of issues with an aggressively Conservative administration which is inclined to give unprecedented credence to the wild men of the right.

But Mr Gerald Harpur, who has followed the student union issue for the Freedom Association, denies a left-right conflict.

"People who are interested, in student politics tend to be left-wing. But people have a right to be apathetic—either in trade unions or student unions."

NUS advises that payments for coaches for grants demonstrations would be "*ultra vires*" but that support for industrial disputes such as Grunwick (or the health workers) would not.

Bradford has tightened its internal procedures since the row over its activities blew up. Following questions raised at Lancaster University NUS took counsel's opinion on the protection for its own affiliation fees.

"Such payments represent not a donation but a payment in respect of benefits and services rendered by NUS to a student union and its members... Such benefits and services are... within the permissible charitable objects."

But it is clear that should NUS become more political, the legal view may change.

mony, the United States, Sweden, and France.

In October 1981 the archive's grant from the SSRC was renewed for three years, and soon after its name was changed from Survey Archive to Data Archive, reflecting a slightly wider remit. It now aims to store a full range of social statistics, including those collected by or for central government. Deposits include data on industrial stoppages, schools statistics, and also on long term unemployed and young people.

The archive receives 20 to 30 inquiries a week, sometimes for quite unusual material. One recent caller, a medical researcher, inquired about the physical dimensions of the British population. But it does not take an analysis for researchers because of costs spiralling inquiries, and also because it wants to encourage researchers to learn the techniques themselves. It has 16 staff including eight academic and six technical workers.

Usage has increased steadily over the years from eight in 1972/73 to a peak in 1980/81 of 222 users calling for 582 sets of data. The slight fall last year when 193 users called for 945 data sets was partly due to researchers awaiting the 1981 Census tapes. The majority are from universities, polytechnics, and research bodies. But the archive is keen to attract a wider clientele, particularly from local authorities.

But surveys are expensive, tedious, prone to duplication, and subject to over-analysis. Duplicating data is cheap, so the way was paved for the SSRC to launch its data bank.

Sir Keith Joseph is concerned about the scientific nature of social studies. He could do worse than visit the Essex archive.

Paul Flather

Making sense of the 1981 Census

The SSRC's Data Archive has almost finished taking delivery of its largest survey.

ever is under scrutiny. Ordnance Survey maps linking these districts to geographical areas are also stored at the archive.

Dr Nigel Walford, a senior research officer at the archive, is looking after the census tapes full time. He is running a series of workshops and seminars explaining the potential importance of the material, which he describes as a "10-year benchmark of social and economic contours of the nation."

"From the tapes we can see if the population is getting older or younger, how mobile people are, and where they are moving. All this is vital for analysing social trends," he said. It is particularly important as the 1976 Census was cancelled for financial reasons. His own work from the tapes on the eastern counties of England, for example, reveals a great increase in car ownership since 1971.

The last of Dr Walford's regional talks linked to the computer centres has just taken place at Bristol University. But others covering the history, use, arrangements for distribution, and perhaps local examples, are planned for Durham, Sussex and Aston universities, South Bank and Liverpool polytechnics, and Wye College, London University.

The archive was set up in 1967 with a brief to collect and preserve machine-readable data linked to social and economic affairs from

academic, commercial, and government sources, and to make it available for secondary analysis. It now holds more than 2,050 surveys covering national and regional political data, housing, education, and welfare studies, urban planning, population, recreation and leisure, consumer, and socio-economic affairs. The range covers time-series data, major longitudinal studies, and cross-national studies.

Important government surveys in stock for example include previous census tapes, the annual Family Expenditure Survey of consumption by the Department of Employment, the annual General Household Survey, the biennial Labour Force Survey by the EEC, the national food survey, and a dwelling and household survey done in 1977/78.

One of the most interesting holdings is the 1981 Census reconstructed by Professor Michael Anderson, professor of economic history at Edinburgh, with an SSRC grant. Based on a 2 per cent "clustered sample" all covering 415,000 households, it allows for some far-reaching comparative analysis.

The archive has also gradually accumulated all the regular opinion poll data produced by the main commercial agencies such as National Opinion Polls, Gallup, and Louis Harris. There are also foreign exchange facilities with archives in Belgium, the Netherlands, West Ger-



The Kariba dam: such constructions are not easily studied at university.

Design for living

Jon Turney reports
from a pioneering
conference at Bath

The newly graduated civil engineer is a narrow-minded specialist. He, or occasionally she, begins work prejudiced against other specialisms, behaves arrogantly in mask an underlying inferiority complex, and may never overcome an inability to work in a team. Professor Fritz Wenzel, who put this view to a student conference on the nature of engineering design last week, was speaking of German graduates. But the British conference was also inspired by misgivings like these.

In fact, the misgivings were first voiced by students at Bath University, the conference venue. Their dissatisfaction arose because of the unusual structure of the civil and structural engineering courses at Bath. As Professor Wenzel, of Karlsruhe University, made clear, emphasis on calculation and technique at the expense of design or aesthetics is the rule in engineering courses. He lamented the way the roles played by different professionals in a building project have moved further and further apart since the day of the "master builder" who was architect, engineer and artist in one.

However, Bath cuts across this now hallowed separation to some extent. Engineering teachers' concentration on analysis was especially obvious to students in Professor Ted Happold's department of building engineering at Bath, because civil and structural engineers there are taught jointly with architects for nearly two years. Why, they asked, aren't engineering designers as well known as architects - who should we look up to instead of Frank Lloyd Wright, Le Corbusier or Mies van der Rohe? And why does no one speak to us about engineering design, even if designers aren't public figures?

The answers, it seems, lie in a self-perpetuating weakness in the university curriculum. "We teach what's easy to teach," Dr Stephen Ledbetter of Bath suggested. And most engineering lecturers are unhappy talking about design because of their own limited experience. At the same time, the people who could help are too busy, designing, to pause and explain what is really involved in conceiving a new bridge, a dam or an offshore oil platform.

Well, perhaps not entirely too busy. The solution students and staff at Bath came up with was to try to persuade leading designers to come to their conference, talk to students and spend time in discussion groups and supervising design exercises. Almost all accepted.

Other parts of the organization proved a little harder. A subsidiary goal was to bring together students from different universities, but some heads of departments were loath to let their engineers come in term time. The Bath organizers disagreed with the implication that three days of standard course lectures must be more educationally profitable than any competing attraction at another university and tried to contact students in these departments directly. The second obstacle was the lack of what rapid conference coordinators regard as prerequisites: money and accommodation. Fortunately, the invited speakers were enthusiastic enough to give their time free, and

everyone, speakers, lecturers from other universities and 300 or more students, was put up somewhere, although for most of the students attendance meant sleeping on floors, or even in local church halls.

The result was a very informal meeting of students from all over the country, though not from Oxford, Cambridge or London, as Bath's vice-chancellor noted. And over the plan of the conference they heard Europe's leading engineering designers. Among the most distinguished were Fritz Leonhardt, "probably the greatest living civil engineer", according to Professor Happold; Oleg Kerensky; Paul Back; and Stefan Tietz.

If none of these is exactly a household name, that underlines the point of the conference. For the students, it was a rare opportunity to hear the views of people who helped design, among other things, the Munich Olympic stadium, the Kariba dam, and just about every famous bridge one can recall, from the Forth to Sydney Harbour. Their design credentials were demonstrated by the profusion of slides most used, which brought home the civil engineer's unanswerable reply to the pervasive academic snobbery: instead of books, papers or lectures, engineering designers help produce useful, striking and often overwhelmingly impressive objects and artefacts. And they are not constructions which can really be studied in universities because they consume money and time far beyond the resources of an academic institution. As the bridge designer David Lee put it: "Engineering is an art form which has the distinction of having a direct effect on our lives physically - in fact it is the most important art form, in the only way we move forward."

The selection of speakers was a gamble. It was clear few were often asked for philosophical reflections on project brief, interpreting it, and presiding over the required design from conception to construction. Stefan Tietz probably spoke for many when he compared the invitation to dissect this process to asking a centipede how to walk: "I know how I got here but I couldn't tell you which leg I moved when."

However, most of the lecturers strove to convey something of the potli they took to a successful design. Naturally, some succeeded better than others, but the highlights were enough to give any student civil engineer food for thought. Dr Paul Back explained how even when erecting a vast concrete wall to retain many millions of gallons of water, he tried "to work with nature rather than against it". He maintained that dam could enhance a landscape rather than spoil it.

Derek Suggden of Arup Associates gave a marvellous, roving dissertation on the balance between engineering intuition and architectural precedent. Passing from Sung dynasty public buildings in China through 1,000 AD via Stephenson's locomotives and the iron bridge at Coalbrookdale to the American and Russian lunar vehicles of the late 1970s, he showed how even the most abstract design is shaped by cultural precedent, and structural forms evolve with changing materials.

Professor Tom Mavor of the University of Strathclyde complemented this dip into the past with a look at the future opened up by the latest computer-aided design techniques. He suggested that the ease and realism of visualization new computer programmes offer will permit users to play a much more active part in design decisions. Trials in Glasgow have shown that nursery teachers can produce school designs which compare favourably with plans by corporation architects.

And John Derrington of Sir Robert Macalpine and Sons took the audience through the different stages and levels of decision in a really large project like the concrete gravity platform his company built for North Sea oil production. Even at this level, he emphasized that most design involves no real stress and force analysis as it is taught at university, and needs little mathematical expertise. As several other speakers also observed, sketches, rough calculations and an informed feel for behaviour of the material over a wide range of conditions were more important than mathematical rigour.

James Gordon, professor of materials science at Reading University, said that while stress and force analysis "provides superb exam questions", it was actually very poor for large structures. But as with the other contributors, his general point was not to disparage the formal techniques taught on undergraduate courses, but to urge that they should not be the exclusive focus of the curriculum. The additional ingredients of good design were characterized as stemming from intuition, concern for the eventual users of the structure, a feel for aesthetics or concern for wholes rather than parts. Sometimes, the qualities not directly related to the function of a structure were obvious - it is difficult to design an ugly suspension bridge. But more often they relied on more nebulous ingredients - according to Stefan Tietz: "Design above all seeks fitness for purpose, and the purpose at its best includes some delight."

From the accounts of real design processes, and the way they evolve through consideration of brief, costs, materials and action and reaction in discussions with architects, contractors and customers, it was easy to see the problems of teaching much about the business before the student becomes a practising engineer.

The result, in structural engineering, Frank Newby's view, was that "when you leave university it's a matter of luck whether you work with someone who can introduce you to how structures are conceived - and to the history of such things". That, to essence, was the gap the conference was trying to fill, and the student audience seemed to find it a stimulating exercise.

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William Bonfield describes the contribution made by materials science to the technological advance

A science for the future

Twenty years ago, a sixth-former looking through a list of possible university degree subjects or scanning through the major scientific and engineering journals would have found no direct mention of materials science. In contrast today, over 20 degree courses in materials science are on offer in British universities, while the *Journal of Materials Science*, which started as a quarterly in 1966, now appears as a monthly issue containing 350 pages, with articles from authors in 50 different countries and a world wide circulation.

The impressive growth of the subject in this period has been stimulated by its relevance to industrial needs. It is evident that all engineering products have to be constructed of "suitable" materials, but the selection of the "right" material for a particular application can be a difficult and demanding task. Materials science provides the means of approaching this problem, as it combines a knowledge of the structure and properties of those materials used in engineering, namely metals, polymers, ceramics and glasses, electrical materials (such as semi-conductors) and composites ("tailored" mixtures of different materials).

The dependence of an industrial society on materials of course predates materials science by many centuries. The progress of early man was aptly recorded in terms of the progress from the stone age to the bronze age, followed by the iron age, which, in a materials sense, and perhaps renamed the steel age, extended through the industrial revolution, when the ability to make, shape and form iron and steel was a key element in industrialization, until modern times. As metals provided the paramount engineering material during this period, an associated academic study of the extraction, structure and properties of metals, or metallurgy, had been established in several British universities, by the late nineteenth century.

Metallurgy remains today as an important academic discipline, as metals still constitute a major portion of engineering materials, but the development of materials science has reflected the increasing industrial utilization of other materials in response to the increasing complexity of design and, not least, the emergence of the semi-conductor based devices. Indeed the essence of materials science is that by considering all possible engineering materials, including metals, as within its context, the practitioner of the subject can decide the issue of which material is most suited for a particular application.

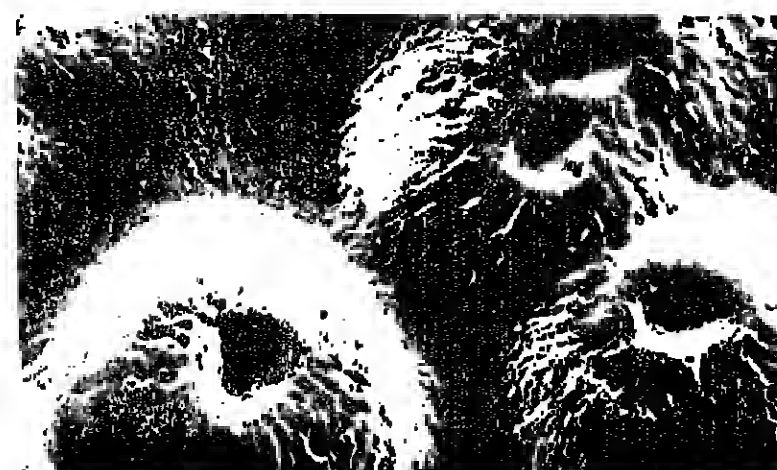
The scientific core of materials science, in common with metallurgy, related to an understanding of structure, properties and of the correlation between them. Materials may be conveniently divided into amorphous and crystalline solids. Amorphous solids such as glass and some polymers, consist of atoms arranged in a random manner. In contrast, in crystalline solids, comprising all metals, ceramics and some polymers, several atoms are arranged in a regular manner to unit cells of dimension $\sim 10^{-10}$ m which are packed together to form crystals (of dimension from 10^{-2} to 10^{-6} m). If all the unit cells were packed together with the same orientation, then a single crystal is produced. While crystals can be readily observed by eye or by optical microscopy, information on the unit cell configuration requires the use of radiation with a wavelength of the same order of the spacing of atoms in the unit cell and the development of X-ray diffraction by Bragg in 1910/20 proved an admirable technique for this purpose, which remains of considerable importance. It is possible by X-ray diffraction to determine the unit cell structure and size (the lattice parameter) of any given crystalline solid either alone or in combination with other solids.

For example, copper and nickel as pure metals have the same unit cell structure, but different lattice parameters. When any combination of copper and nickel is melted together and then solidified, only one type of crystal can be identified under the microscope, a microstructural entity or phase which consists of a solid solution alloy formed by the substitution of copper atoms for nickel atoms in the unit cell, or vice versa, a process which results in a different lattice parameter to either of the starting metals. The Cu-Ni alloy is one of the simplest types of alloy, but in a similar manner, the unit cell structures of alloys of increased complexity involving several elements and multiphases can be unravelled by this technique.

If crystalline solids were built in the perfect manner that has been described so far, then no further characterization would be required, but in general there are defects in the atomic packing, within crystals, which have profound effects on the resultant properties and which also require definition. Of particular concern are line defects (dislocations) which can be loosely considered as local irregularities in atomic packing. It is noteworthy that this important concept was derived theoretically about 25 years before the development of transmission electron microscopy (TEM) in the late 1950s allowed a direct visual confirmation of its correctness. Initially the resolution available by this method limited observations of dislocations to "imaging" rather than to the actual dislocation structure, but the intensive development of TEM during the last decade and the consequent improvement in resolution (to $\sim 2 \times 10^{-11}$ m) has allowed direct lattice imaging of dislocations in a variety of metals, semi-conductors, ceramics and polymers.

Having characterized materials in terms of microscopic and sub-microscopic structure, the materials scientist seeks information on the particular properties associated with particular materials. Of special concern are the "mechanical" properties such as stiffness (ie how easy is it to bend or extend (deform) the material, with it returning to its original shape when the force is removed) or strength (ie the material is deformed to such an extent that either a permanent change in shape is achieved (the yield strength is exceeded) or the material fractures (the ultimate tensile strength is exceeded).

The distinction between stiffness and strength is often confused - for example, glass and aluminium would seem intuitively to have very different properties, but in fact have similar values of stiffness (Young's modulus). What is noticeably different is that glass fractures in a brittle manner (ie without any



A scanning micrograph of polyethylene which has been chemically treated to reveal the "spherulitic" crystal structure

permanent deformation), while aluminium fractures in a ductile manner (ie with considerable permanent deformation prior to fracture).

From the standpoint of designing a structure, it is necessary that the applied stress does not exceed the yield strength of the material, and that the change of shape produced by the applied stress can be accommodated. The latter point can be resolved by selecting the particular stiffness required as a wide range of stiffnesses are available between different materials. For example, on the same scale (as defined by the Young's modulus (E) in GNm^{-2}), we have a polymer such as polyethylene with $E = 1$, aluminium (and glass), $E = 70$, copper, $E = 120$, steel, $E = 210$, aluminium, $E = 365$ and so on. In contrast, the yield stresses (strictly, the critical resolved shear stresses) of most pure metals in single crystal form are comparable and too small for any significant structural design to be contemplated. This result is a direct consequence of the presence of dislocations within the crystals, as it is the movement (and multiplication) of dislocations which results in yielding and plastic deformation.

To produce a suitable structural material from this starting point, it is therefore necessary to increase the yield stress by either removing all the dislocations, or by introducing "obstacles" to their movement. The former treatment is unfortunately only possible on a microscopic scale and certainly demonstrates the point that a dislocation-free solid has a yield stress approximating to the theoretical prediction for a perfect

solid. However, the important application of dislocation free, single crystal silicon is not as a structure, but as the essential prerequisite for the ubiquitous "silicon chip" technology. The alternative treatment of introducing "obstacles" to dislocation movement as a means of increasing the yield stress may be achieved by increasing the number of dislocations (ie giving more intersecting dislocations), increasing the number of crystal boundaries (ie using a polycrystalline solid of small crystal size) and introducing "other" atoms or different phases. By these means, the yield stress can be substantially increased to levels permitting structural application and, as for stiffness, giving a range of values for different materials.

One method of substantially altering both the stiffness and the yield stress of a material is by a mixture of materials referred to as a "composite". This has a particular benefit for polymers, for which the stiffness ($E = 1-5 \text{ GNm}^{-2}$) is too small for many structural applications (ie too much change in shape is produced by an applied stress). However, by reinforcing the polymer with a significantly stiffer material such as glass fibres ($E = 70 \text{ GNm}^{-2}$) or carbon fibres ($E = 200-400 \text{ GNm}^{-2}$) then a composite of substantially increased stiffness is produced. As the glass and carbon fibres are also stronger than the polymer matrix, the strength of the composite is also increased.

Hence considerations of stiffness and strength are basic factors which are important in materials selection for design. While seeking to prevent the operating stress exceeding the yield stress, situations may sometimes occur in which an overload is produced. Such an event need not be catastrophic in terms of producing an immediate fracture if the material is "ductile", when considerable plastic deformation can occur. However, it is an important consideration which has tended to preclude the use of "brittle" materials in structural design. Sometimes, the distinction between ductile and brittle is not clear cut and indeed many of the higher-strength materials only exhibit limited ductility. For these brittle and semi brittle materials, it is necessary to define fracture more carefully in terms of an applied stress and of a characterized surface crack. In general, an increase in the introduced crack length reduces the applied stress for fracture, but for a given material, a unique value of fracture toughness - which combines the effects of stress and surface cracks can be evaluated. Such a consideration of fracture will dominate the forthcoming Sizewell inquiry on the proposed PWR nuclear reactor, as the argument essentially turns on whether the material constituting the pressure vessel is sufficiently "fracture tough" for catastrophic fractures to be "unlikely". A similar view has dominated research on ceramics, which are essentially brittle, with the "toughened" ceramics, such as silicon nitride and zirconia, which are now available, creating new applications for these materials, with the inviting prospect of ceramic pistons and perhaps, in the future, an all-ceramic diesel engine.

Other complications in materials application may arise from the ap-

plication of stress in a cyclic manner, as for example in the case of vibration in an aircraft wing, which can result in "fatigue" over a period of time, namely a sequence of plastic deformation, crack formation, crack propagation and fracture at stress levels well below the normal ultimate tensile strength. Equally the application of stress at a sufficiently high temperature can produce continuing plastic deformation at a constant stress ("creep"), leading finally to fracture.

For example, the turbine blades (made of a nickel based alloy) on the outlet fan of a jet engine are subjected both to hot exhaust gases (at $\sim 700-850^\circ\text{C}$) and an applied stress due to centrifugal rotation, a combination of stress and temperature which must be carefully controlled to minimize creep deformation and to avoid creep fracture. Superimposed on all materials applications is the influence of the particular environment, which can either produce oxidation or corrosion as singular effects or contribute to an acceleration of the prevailing fracture, creep or fatigue mechanism. One example of this demanding situation is provided by the application of materials as prostheses in the human body. Total-hip replacement is one such procedure, (with approximately 30,000 operations per year in the UK), in which the femoral head is replaced by a cobalt-chrome alloy or titanium alloy, which is inserted into the marrow cavity and fixed in position with a polymer "cement", while the head of the alloy locates in an acetabular polyethylene "cup" in the pelvis.

The combination of materials used in this operation must be bio-compatible (ie not produce an adverse tissue reaction), and able to withstand, in the prevailing body fluids, the various direct and alternating stresses applied to the hip for a "reasonable" period. In practice, it appears that after 10 years about 50 per cent of the joints are likely to have "failed", not in the main due to creep (or wear) of the acetabular cup or fatigue (or stress corrosion) of the alloy, but rather because of "loosening" or failure of the cement bond, an effect exacerbated by the enlargement of the marrow cavity due to changes in the natural bone itself. This result demonstrates that in this application the structure and properties of bone as another "material" should also be considered and indeed this has been a fruitful field of study for many years.

With a knowledge of structure-property relationship in engineering materials developing from the concepts outlined in this article, the materials science graduate has broad industrial horizons - he or she is able to critically select materials to particular specifications and to test their quality to contribute to a design process, to organize a production schedule involving the forming, joining, heat treatment and finishing of materials to analyse field failures and to develop improved or new materials if existing materials prove inadequate.

This last point is likely to prove a continuing process, as no one class of materials can yet be considered to have reached its ultimate development. As well as the examples mentioned previously in current research, we have metals being produced in an amorphous form by a very fast cooling technique, polymers being produced with a preferred orientation or as large single crystals, combinations of glasses and ceramics forming glass-ceramics, hybrid-composites involving multiple fibre reinforcement, carbon fibres reinforcing aluminium alloy wire and aluminium being toughened by zirconia particles. Consequently, materials science offers a bright future to present and future graduates in the subject - indeed their contributions will be of vital importance if the UK is to continue to exist as a technologically-advanced country.

The author is professor of materials at Queen Mary College, London and Editor of *Journal of Materials Science*.



An X-ray of a total hip replacement operation, showing a titanium alloy implant inserted in the marrow cavity of the femur and located in a polyethylene cup in the pelvis

Germany's unemployment and the rise

Fifty years ago, on the morning of January 3, 1933, former Prussian Minister President Otto Braun presented his pessimistic assessment of the political situation to the executive committee of the Social Democratic Party.

The people have elected a parliament the majority of which is anti-parliamentary. We took the position that in a democratic state the people's will must decide... Yet no government can govern with the present parliament, therefore it must be a question of a dictatorship. It is not the political situation which is decisive; it is the economic situation, with the six million unemployed, which hampers us.

Braun offered no way out of the dilemma. His only recommendation to Social Democratic Party comrades was that they not be rushed into doing something foolish. A few hours later came the news that Hitler had been appointed Reich Chancellor. Within a month the Social Democratic press had been silenced. Within two months virtually the entire Social Democratic trade union movement had been destroyed. Within six months the SPD had been made illegal and Germany declared a one-party state.

Other responses to the challenge posed by Hitler's appointment proved no more successful than that of the Social Democrats. The Communists, who had been so scornful of the SPD's timid wall-and-see attitude and who issued bellicose calls for a general strike, merely gave the police an excuse to move against them. The Catholic Centre Party, although it sought accommodation with Hitler, failed to survive through the summer of 1933. The remains of the parties of the middle, whose few Reichstag deputies also supported Hitler's demand for an "Enabling Act" in March 1933, did not fare any better. Nor, for that matter, did Hitler's conservative coalition partners: by the summer their leader Alfred Hugenberg (who, with the portfolios of both economics and agriculture, appeared to have captured so powerful a position in the Hitler cabinet) and his colleagues were outmanoeuvred and their party organization dissolved.

The willingness of Germany's conservatives to collaborate with the Nazis, the weakness of a left divided and on the defensive, the militant activism of the Nazi rank and file, and the readiness of leading figures in industry and the armed forces to support the new government helped Hitler achieve a stronger position within six months of gaining office than Mussolini had enjoyed after six years.

In his unhappy and defeatist assessment in January 1933, Braun stressed the debilitating political effects of unemployment levels never before seen in Germany. Indeed, few

aspects of the collapse of the Weimar Republic and the rise of the Nazis have drawn so much attention as the impact of the economic crisis. The date queues, soup kitchens, locked factory gates and horrific unemployment statistics have dominated our picture of the final Weimar years. To say that mass unemployment played an important role in the destruction of the first German democracy seems to state the obvious. Those attacking the Weimar system were able to capitalize on this unemployment, which disproportionately hit the young.

What is more, the violent street politics of the early 1930s hardly would have been possible, certainly not on such a scale, had work been available for young Germans. Hundreds of thousands of unemployed young men found their way into the uniformed formations of political parties. The Nazi storm troopers

Hitler: was he the last hope?



alone numbered roughly half a million on the eve of Hitler's becoming Chancellor - five times the number of men in the army at the time - and thousands more were organized in Social Democratic, Communist and even Catholic uniformed formations.

The escalation of political street violence, the rapid increase in electoral support for the Nazi Party, the disintegration of the Weimar political system, the growing willingness to consider anti-democratic and authoritarian solutions to social and political problems, and the rising tide of unemployment all appear to have been moving in tandem. Mass unemployment thus seems to have been instrumental in destroying the social and political fabric of Weimar democracy and clearing the way for the coming of the Nazis to power.

Such arguments recently have taken on an increasingly uncomfortable contemporary relevance. During the early 1980s, when unemployment in western industrial countries stood at levels which now seem almost idyllic, it was tempting to speak in the past tense (as Ernst Nolte did) of bearing the stamp of the First World War and severe economic depression.

After the Second World War pluralist democracy appeared to have se-

Fifty years after Hitler's rise to power Richard Bessel argues that the real enemies of the Weimar democracy were those who took political advantage of the unemployed

cured a firm footing in western Europe, based upon economic growth and social welfare. The bad old days, when economic difficulties meant not merely a decline in the growth rate but a decline in production, were an ever more distant memory. But when growth no longer can be taken for granted and unemployment reaches new peaks, each set of monthly statistics can still be so confident in the stability of democratic solutions. Is the lesson of Weimar that mass unemployment undermines stable democratic government?

For those who may be prompted to answer that it is, some thought should be given to the political impact of mass unemployment in Britain and the United States during the early 1930s. In neither Britain nor America did radical mass movements effectively mobilize the jobless. Neither the Jarrow marchers nor the Bonus marchers can be compared with the members of the Nazi "Storm Sections" (SA) or the Communist "Fighting League against Fascism". Nor, for that matter, were they typical of the British or American unemployed.

In Britain the worst of the slump formed the background to the landslide election victory of the National Government. In the United States the saviour of the unemployed turned out to be an independently wealthy politician who in 1932 promised fiscal conservatism and a balanced budget. Unemployment in Britain and America appears not so much to have radicalized its victims as to have disheartened and immobilized them. Why then does it seem that in Germany mass unemployment led to political extremism and the collapse of liberal democracy?

A closer examination of the relationship of mass unemployment to the destruction of the Weimar Republic, however, suggests that some of the differences between Germany and America or Britain may be more apparent than real. To see the rise of the Nazis primarily as a consequence of the endless date queues may be misleading.

In the first place, the Nazi movement was not the main direct political beneficiary of the rising joblessness. It was not the Nazis who formed the party of the unemployed in the early 1930s; it was the Communists. Already by September 1930 roughly 40 per cent of the German Communist Party membership was unemployed, and it has been estimated that at the depths of the Depression four fifths of the party's membership were without a job. By the end of 1932 only about 11 per

cent of Communist Party members were factory workers, and the party turned increasingly to organizing hunger marches and agitating in the unemployment exchanges.

Yet despite their successes in gathering support during the Depression and the assertions of East German historians notwithstanding, the Communists never were serious contenders for power. Although the police - and not least the Social Democratic-led police in Prussia - were anxious to keep watch on these enemies of the Weimar state, the Communists had neither the mass support, the economic strength nor the fire power necessary to seize power.

Employers were concerned not so much with the Communist threat as with the challenge posed by the Socialists. For it was the demands of the Socialist trade unions which cost money, and it was the use of the state machinery by organized labour to achieve real social and economic gains at the expense of the employers which ultimately helped make democracy unacceptable to the latter. The Communists and their unemployed followers were essentially onlookers to this struggle - a nuisance to the police but hardly a threat to the state.

One consequence of mass unemployment was a deepening of political divisions within the left. As the economic situation deteriorated the political divide between Communists and Social Democrats paralleled ever more closely the social division between the skilled, respectable and employed working class on the one hand and the unskilled and unemployed on the other.

The difference between Socialists and Communists involved more than just differences about ideology and tactics; they reflected the deep fragmentation of the working class in Weimar Germany, a fragmentation exacerbated by the reality or threat of long-term unemployment. Thus the oft-repeated calls for unity on the left, both at the time and in partisan histories subsequently, have been wide of the mark. No real basis for unity existed. Even had the left somehow been able to overcome the divisions it remains doubtful whether it could have fought successfully against the combined forces of the police, the army, the Nazis and the majority of the German population to whom "Marxism" was anathema. For those who still cling to the romantic belief that the German left could have warded off the fascist peril, a glance at the Austrian experience should be sobering. In Austria the left did stand and fight. And lost.

The support gained by the Nazis from among the working class also is evidence of its fragmentation during the Weimar period. Richard Hamilton, in his exhaustive and exhaustive study of electoral support for the National Socialists, has suggested that the Nazis picked up votes from what in the British context would be regarded as "working-class Tories". But while the Nazis did have some unemployed in their ranks - and the composition of the SA in many urban centres demonstrates this - the bulk of the Nazi Party's members and voters did not come from the date queues.

Although it has been said many times already, it merits repeating that the working-class Nazi was neither a typical worker nor a typical vote in Saxony. This goes all the more for the unemployed. Indeed, one major strength of the Nazi Party at the local and regional levels was that it had such solid support from among the middle strata and could call upon their economic resources. Unemployed storm troopers, for example, had their uniforms paid for by the party. Property-owning party members and where-as-Communists generally had to evade their rallies or use public transport. Nazis often

had access to motor vehicles. On another level, it was not pressure from radicalized masses of Nazi unemployed which put Hitler in the saddle, but his ability finally to convince industry, the army and an aged Reich president that a government under his leadership might not be such a bad thing after all.

But this line of argument does not rule out the possibility that unemployment nevertheless may have made a powerful but indirect contribution to the Nazi rise - that mass unemployment may have so undermined the political system and frightened the electorate that people were willing to turn in desperation to their "last hope, Hitler". While there undoubtedly is much to be said for such reasoning, a look at the fate of the bourgeois "middle ground" of Weimar politics suggests that some qualification is necessary.

In the first place, as Larry Eugene Jones has demonstrated in a series of perceptive articles, the "middle" was in an acute state of decay and disintegration before the Nazis began to attract voters and party members in large numbers. That is to say, the Nazi advance did not lead to the breakdown of conventional bourgeois politics in Weimar Germany; rather, the breakdown of the bourgeois middle should be seen as one of the important preconditions for the Nazi advance. The Nazis were the beneficiaries of the bankruptcy of tradi-

The 'virtue' of being a fanatic



tional liberal and conservative politics in Germany, not its cause.

Second, a comparison of the increase in Nazi voters with the increase in the number of unemployed during the final Weimar years suggests that the former may have preceded the latter rather than the other way round. A decade before serious effects of the economic crisis began to be felt at the end of 1929 and in 1930, and long before the banking crisis of 1931 turned the slump into the most savage depression Germany had ever experienced, the Nazis had been making steady progress at the polls.

The vast increase in support for the NSDAP in national elections between May 1928 (810,127 votes, 2.6 per cent of the total) and September 1930 (6,379,672 votes, 18.3 per cent of the total), which made the Nazis the second largest faction in the Reichstag, should have come as no great surprise to anyone who had been following previous election results. Already in May 1929 the NSDAP received nearly 5 per cent of the vote in Saxony (as against 1.6 per cent in October 1926); in October 1929 it captured almost 7 per cent in elections in Baden; in November it attracted 8.1 per cent in Lübeck; in December it won 11.3 per cent in Thuringia; and in June 1930 it amassed 14.4 per cent of the vote in Saxony.

Unemployment, on the other hand, began only at the very end of 1929 and in 1930 it exceeded levels reached in the slump of 1926. Then, for the first seven months of the year, the total number of unemployed in Germany was above two million and it should be noted, the better-off property-owning party members and where-as-Communists reached truly unprecedented levels in the early 1930s: many of the worst unemployed (black specks - the

of the Nazis

Ruhr, Upper Silesia, Berlin - were also areas where the Nazi Party did relatively poorly at the polls. The reasons are not hard to find: those people who were most likely to lose their jobs - industrial, particularly unskilled, urban workers - were among the groups least likely to support Hitler; and where unemployment was less of a direct threat - among small-town shopkeepers, farmers, white-collar workers, civil servants - there the Nazis found a disproportionately high amount of support.

If the unemployed did not tip the scale for the Nazis at the ballot box, they certainly played a key role in the wave of political violence which accompanied the demise of the Republic. The street violence involving the Nazis and their political opponents reached terrifying proportions in the early 1930s. Hundreds of people were killed and thousands injured. The most serious fighting took place between Communist and Nazi sympathizers, although members of the largely Social Democratic Reichsbanner also did not shy away from trouble.

In assessing this wave of violence, two points are worth noting. First, the biggest losers were probably the Social Democrats, not because the Reichsbanner failed to give as good as it got but because the Social Democrats' organization and style of politics left them particularly vulnerable to Nazi violence. The leaders of the Social Democratic movement were not the sort who gladly raised a call for violence; the emphasis at the SPD on public meetings and rallies left it very open to attack; and the organization's network (including trade union and newspaper offices) which the Social Democrats so treasured offered many easy targets for the SA.

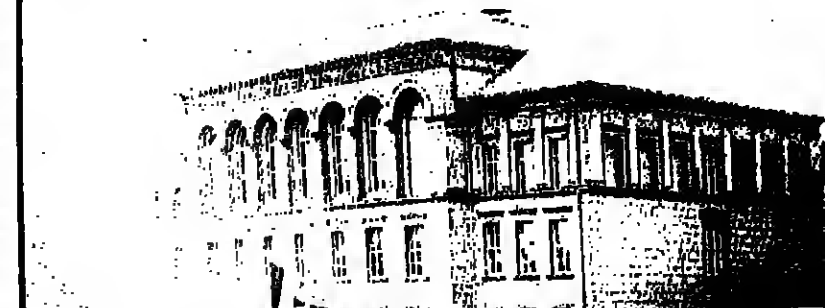
Second, despite the undoubted seriousness of the violence (some historians of the period) it nevertheless was kept within certain, fairly well-defined limits. Nazi storm troopers may have been regarded by some as "fanatics" (a term of praise in Adolf Hitler's vocabulary) but they were not so fanatical as to stage frontal attacks on police stations or army barracks. For all their violent rhetoric, the Nazis steered clear of challenging directly the power of the state.

In the weeks after Hitler was named Reich Chancellor the violence of the Nazis' brown-shirted supporters was unleashed with renewed vigour. Now neither the police nor the army stood in the way of the "uprising of the small-time Nazis" and the main target was once again the left.

However, this process needs to be looked at more carefully. Immediately after January 30 the storm troopers were preoccupied largely with campaigning for the elections scheduled for early March. During this period it was the police - still under the control of conservatives, many of whom had been installed by von Papen in July 1932 - who took the initiative in suppressing the Communists. It was not until March and April 1933 that the Nazi activists mounted what appears to have been the decisive campaign against the SPD and the trade unions.

This campaign seems to have been initiated largely from below. It was not, as far as we know, planned by Hitler and the Nazi leadership in Berlin or Munich, and it was all the more attractive for that. Rather than face a single, coordinated onslaught the Social Democrats saw their local party headquarters, newspaper offices and trade union bureaux picked off one by one. Storm troopers, a number of whom had been deputized as police, used the opportunity to settle old scores and there was little their victims could do to resist.

For what was the decisive moment? The point at which a stand should be made? There is little doubt that many younger members of the Reichsbanner were prepared to stand and fight in early 1933, but when should they have been called on to put their lives on the line? Was it on March 8 when the SA, with the aid



Nazi stormtroopers hold a mass rally and inspection

of the police, occupied the trade union headquarters in Breslau after violence which left one person dead and four seriously injured? Or was it when the SPD headquarters in Liegnitz was taken over and ransacked by Nazi storm troopers a few days later? Or when, on the evening of March 20, armed Nazis broke into the trade union offices in Schneidemühl? Or when, on April 1, trade union headquarters in Hanover and Frankfurt/Main were occupied?

Although some of the Nazi leaders were uneasy about the undisciplined actions of their supporters, it is clear that they profited by these actions. Instead of resolute resistance to the rampaging storm troopers, the Nazis had only to worry about the meek protests of trade union leaders to Labour Minister Seidler, Vice-Chancellor von Papen and Reich President von Hindenburg. By the time Germany's new rulers triumphantly closed down the free trade unions and replaced them with the "German Labour Front" in early May, the German trade union movement already practically had ceased to exist.

The question remains whether the Nazi violence in fact destroyed the Social Democratic movement or whether it just revealed that the SPD and associated organizations no longer had much fight left in them. Perhaps the real service of the SA to Hitler in early 1933 was less to win a decisive battle over the left than to demonstrate that no real battle still needed to be fought. The Social Democrats already had backed away from confrontation in July 1932, when Reich Chancellor von Papen ousted the SPD-led Prussian government; and there was little likelihood that they would be able to accomplish in 1933 (against much greater odds) what they had been unwilling to attempt in 1932.

The republic with which the Social Democrats had been associated was discredited; the right had command of the repressive apparatus of the state; the economic position of millions of German workers and their dependents was desperate; and the strike weapon was, to say the least, blunted by the presence of six million unemployed. In short, the economic and political base from which to fight for democratic government probably no longer existed.

It is here that we come to the real contribution of the economic crisis generally and of unemployment specifically to the coming to power of the Nazis. Unemployment was a powerful weapon in the hands of those who wanted to see the end of Weimar. During the mid-1920s German labour had benefited not only from higher wages but also important changes in social and labour legislation - including the introduction of government arbitration in industrial disputes (which often favoured labour) and the passing of the 1927 law on labour exchanges and unemployment insurance, which extended statutory unemployment insurance to over 17 million employees, more than in any other country.

This sort of state involvement in the economy, of course, cost employers dearly. Democratic government put labour in a position to make real material gains. With the Depression, however, things changed. The economic crisis was used to squeeze working-class and trade union representation out of government and to roll back the frontiers of the state. Although the motives still are the subject of some debate, there can be little doubt that the deflationary policies of Brüning effectively meant the dismantling of the Weimar welfare state.

Maintaining the changes achieved through deflation was possible so long as those on the receiving end did not have the means with which to fight back. In the early 1930s the position of those on the receiving end was extremely weak. The German Communist Party might thunder about the imminent collapse of capitalism, but at a time when the wheels of industry already were at a virtual standstill, calls for militant action were hollow indeed. The weakness of the Labour move-

Who, then, supported him?



But what would happen when the economy finally recovered? This was a central question facing those who had used their muscle to smash the German welfare state during the depression years. Would not the trade unions recoup their losses if something approaching full employment returned to Germany?

It was this problem which, in the final analysis, made a return to Weimar democracy unacceptable and the erection of a new authoritarian state a necessity. This is not to imply that most leading industrialists in the Reichsverband der deutschen Industrie were really Nazis, waiting only for the opportunity to hoist Adolf Hitler into the Reich Chancellery. But the alternatives offered by Brüning and von Papen for reducing the burden of social expenditure and dismantling democratic structures were not viable politically.

However attractive von Papen's "new state" may have seemed to the captains of industry, it could not provide a long-term solution against the wishes of 95 per cent of the electorate. However unattractive Hitler and his rowdy followers may have

been, at least they brought mass support to policies which promised to make permanent the weakness of the working class during the Depression. Thus the main contribution of the Nazi dictatorship involved not the flocking of millions of desperate, jobless Germans to the swastika banner but the fatal weakening of the Nazis' opponents and the undermining of the social basis of democratic politics. When looked at from this standpoint, the apparent differences between the political consequences of the Depression in Britain and the United States on the one hand and Germany on the other come into somewhat better focus.

In all three countries the economic crisis demoralized its victims. The unemployed of Berlin, the Ruhr and Upper Silesia did not come much closer to overturning the political system than did the Jarrow marchers or the inhabitants of the Hoovervilles. The reasons for the differences in the political paths taken by Germany, Britain and the United States in the early 1930s have to be sought elsewhere.

One place to look for these reasons is in the more strictly party-political sphere. For example, British conservatism proved infinitely more adept than its German counterpart at holding on to its support and keeping the political system together. German conservatism, in the shape of the German National People's Party, was neither willing nor able to come to terms with the Weimar system; it failed to establish for itself a strong and stable position within the party political spectrum; it could not retain the allegiance of the mass of its supporters once the bourgeois party system began to crumble and the Nazis presented a major challenge at the polls; and in 1933 it committed a pitiful suicide as the junior partner in a governing coalition with Hitler.

The strength of British conservatism was that it retained the support of the kinds of people who in Germany finally opted for the Nazis. The service of the two major political parties in the United States was similar: they too managed to channel their electoral support within the existing political system.

Of course, anyone who attempted to channel such groups of people within the Weimar system operated with a number of handicaps which did not affect the Conservatives, Liberals, Republicans or Democrats. Germany did not enjoy a long or successful parliamentary tradition.

The failure of German conservatism therefore was as much a reflection as a cause of the failure of German democracy. Nevertheless, a difficult birth with military defeat acting as the midwife should not be regarded as necessarily fatal for republican politics, as the history of France after her defeat at the hands of Prussia demonstrates.

Not so long ago it seemed possible to believe that enlightened governments guided by Keynesian economists could prevent a return to the kind of catastrophe which gripped the world in the inter-war period. Now, however, such optimism appears somewhat misplaced; the ghost of Heinrich Brüning seems alive and well in the Treasury and Federal Reserve. But we should be careful not to draw oversimplified political conclusions from alarming economic trends. In the case of the Weimar Republic it was not the unemployed who destroyed democracy. The real enemies of Weimar democracy were those who took advantage of the weakness of the unemployed, and the working class generally, in a cruel and successful attempt to dismantle social welfare and roll back the frontiers of the state.

What turned this configuration into the Third Reich was, among other things, the inability of any right-wing political figure other than Hitler to supply the popular support needed to make such a "salvation" stick. If there are lessons to be learned from January 30, 1933, this is one of the key areas in which to look.

It is no doubt cold comfort that an effective conservative party, willing and able to channel its supporters within a democratic political system and profiting from a pervasive cynicism about the ability of politicians to improve things, may be among the most important bulwarks against right-wing extremism. For it is not those crippled by economic crisis who present the greatest threat to political stability, but frustrated conservatives looking for a new political home and prepared to believe in the Messiah.

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...and the ...

BOOKS

Rights of man

The Left and Right: a conceptual analysis of the idea of socialist rights by Tom Campbell
Routledge & Kegan Paul, £5.95
ISBN 0 7100 9085 4

Many socialists are hostile to any suggestion that individuals have rights other than, or in addition to, those which some particular legal system gives them.

To think of individuals as the bearers of rights is to think of them in terms of what C. B. Macpherson labelled "possessive individualism". Rights are something we possess as we possess cars or houses or capital, and the language in which we habitually talk about rights has built into it the assumption that we naturally live in a competitive world. Rights are what we can insist on; we can waive them, but we are more likely to transfer them to someone else in exchange for some benefit in ourselves, when liberals of even a radical persuasion, such as Ronald Dworkin, write about them, they write about "trumps" ways in which the individual can hold off a hostile society. This assumption is only confirmed by books like Nozick's *Anarchy, State and Utopia* which moves pretty swiftly from the claim that people have rights to defence of the gospel according to Herbert Spencer. The purpose of Tom Campbell's useful and timely book is to dispel their suspicions, not least by showing at some length that writers who have supposed that a concern for rights implies some version of capitalism have just been wrong about rights.

Campbell's case is simple in outline, complex in some of its details. He carries conviction at both levels – indeed, everywhere except in the gloss he offers on some historical writers. His first task is to give a plausible account of what rights are which won't simply beg the case. If we were to hold that only those rights which a legal system in the usual sense accorded us were rights at all, and that a socialist society would not have a legal system in the usual sense, it would follow pretty straightforwardly that under socialism nobody would have any rights. But Campbell is sceptical about getting Marxists to agree with Locke that we have rights in the state of nature in virtue of all being the workmanship of one omnipotent Maker who governs us by natural law. He thinks that any appeal to moral rights needs to be translated into a claim about the moral grounds on which someone ought to have a right recognized by some actual social rule.

Now, once we agree that what it is to have a right is to be explained in terms of there being a social rule giving us that right, socialist rights become discussible: what we have to ask is whether a socialist society would need social rules, and if so, whether those rules would confer rights on people. The reluctance to say so which many socialists feel springs from three distinct sources.

The first is the belief that law is essentially coercive, so that anything sufficiently like law to give people rights will be backed by coercion, and will have no place in a socialist society. To this Campbell replies, in a long and very intricate discussion of Kelsen and Hart, that one can envisage law – or a system of like social rules – operating in the absence of coercion. People need rules to assist cooperation, to provide a framework for socializing children into the norms of their society and so on, and calling people's attention to breaches of these rules would not amount to coercion. Of course, this assumes that people will not be tempted to flout the rules, but it is not so far-fetched that it would justify tying law to coercion conceptually rather than contingently. The second is the thought that rules are essentially restrictive, designed to stop people doing one thing or another, but for this the answer is that rules may be more

important in overcoming lack of knowledge than lack of good will – the rules of the road are an example, and in a socialist society we shall doubtless need a way of identifying people who are entitled to, say, decide what a factory shall produce. The third is the kind of individualism associated with the notion of rights in Hart's essay "Are there any natural rights?". To define rights as an individual's power to control the action and forbearances of others conjures up an image of a society where we deal as adults in an essentially contractual fashion, but where children, the aged, the mentally handicapped, and all those who cannot exercise these powers of control strictly have no rights. Campbell proposes instead an "interest or concern" theory of rights: having rights just is being protected or assisted by a social rule in your most important concerns.

These concerns he then explains in terms of needs – quite rightly in terms of sticking to the Marxist tradition, where socialism is identified as the man who is rich in needs, and socialism is said to transcend the narrow horizon of bourgeois right at the point where it gives to each according to his needs. On Campbell's analysis, we may transcend the narrow horizon of bourgeois right, but we stay in the realm of socialist rights. He gives a very sympathetic account of why socialism should be kinder to "human rights" – freedom of expression, association, political participation and the like – and does a neat job of explaining why a socialist can properly believe that we have both a right and a duty to work, to take part in public decision-making and the rest.

This brings me to two small quibbles. Once we explain the rights people ought to have under socialism in terms of the way they need the resources to do their duty to the rest of society, we may not have shown that socialists need not worry about rights, but we have surely shown that socialists will be thinking primarily about duties rather than rights; it may be that what explains socialist impatience with talk of rights is that under socialism, it is duty which takes priority. The second quibble is that once we take the view that duties come first, we can do justice to a historical figure like Locke who too easily gets dismissed as a capitalist rights theorist. It is because we need the resources to do our duty in the station to which Ood called us that we have natural rights to life, liberty and property. To the extent that capitalism rests on the thought that our rights are simply natural possessions, capitalism is simply at odds with natural rights.

Alan Ryan

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Tolerating intolerance

Free Speech: a philosophical enquiry by Frederick Schauer
Cambridge University Press, £20.00 and £6.50
ISBN 0 521 24340 8 and 28617 4

If we believe in free speech, should teachers be forbidden to wear CND symbols? Should National Front or counter-demonstrations be banned? And should the right to peaceful picketing be protected? These may not be matters which seem immediately to be covered by the principle of freedom of speech, but it is Schauer's treatment of the subject which draws extensively on legal rules and examples, adding a valuable extra dimension to this essentially philosophical contribution to the contemporary debate on civil liberties. A topics are given an airing: censorship and pornography, laws against defamation and intrusion of privacy, the suppression of freedom in the name of national security, picketing, demonstrations and political marches. The perennial "paradox of toler-



Jailed freedom fighters, a photograph from *Unity in Action: a photographic history of the African National Congress South Africa 1912-1982*, published by the African National Congress at £5.00.

tion" – that intolerance itself cannot be tolerated – is interestingly and unusually resolved by Schauer in favour of permitting free speech to "fascists", "racists" and "totalitarians" on the ground that no one – and certainly no government institution – can be trusted with the task of categorizing these groups. And even if it is accepted that some are more competent than others at the task, there is the unresolvable problem of how the majority can be expected to select the more competent. It is scepticism on this, and a consequent belief in the overriding priority of freedom of speech, that accounts for the different and freer legal position on publication and defamation in the United States as compared with Britain.

Another paradox treated by Schauer is the apparently anti-democratic nature of the principle of free speech if it is held as a restraint on majority power – a paradox if the principle is defended by an appeal to democracy. Schauer's solution in this case is to replace the ideal of democracy as majority-power with that of democracy as equal participation. The second interpretation, of course, requires both full information and free communication. Acceptance of the principle is a democracy can therefore avoid what Horace described as "the frenzy of the citizens bidding what is wrong", what Mill described as the "tyranny of the majority" and what Aristotle recognized as a corrupt form of popular power – corrupt because unfettered by principles and constitutional guarantees.

As opposed to theorists like Rawls who have attempted to subsume all political principles under some broad integrating categorization, Schauer is an unabashed pluralist. That is to say, he recognizes a plurality of independent principles and defends free speech as one such principle. The argument from truth – that in an atmosphere of free discussion truth will emerge – is given substantial consideration, but Schauer points out that in the end this and the argument from democracy means ends justify the means ends justify the means. He argues, on the contrary, that free speech as an individual good, free is sympathetic to the view that free communication is necessary for intellectual self-development, but links the right to it to more general principles of liberalism and individualism, and in particular to a belief in the fallibility of governments which generates a need to set limits to state control. At the same time, though, the utilitarian argument that speech may substitute for violence – that "jaw-jaw is better than war-war" – is given some weight.

Speech can be used to exhort, cajole, inform, to generate political movements, to create poetry and literature, to enlarge knowledge through scientific inquiry, or to attempt to express inexpressible longings, reactions, sensations and emotions. It is the unique and arguably the most valuable asset of humans, setting them aside from the rest of nature and giving them their enormous potential for good or evil. It is also the most individual of assets: since the sense in which nations, companies, organizations or corporate bodies can speak, or pronounce or communicate is only derivative. These two facts then – the distinctiveness of speech as a natural phenomenon and its peculiarly individual character – make the question of freedom of speech uniquely important politically and practically. Schauer's clear and elegant study is a major contribution to discussion of this issue. It combines conceptual analysis with normative argument – a worthwhile achievement, for if progress is to be made either in philosophy or in the world of affairs, dispassionate treatment must sometimes give place to passionate commitment. There could be no better place for this process to start than in the defence of a fundamental freedom which happens also to be the first condition of philosophy itself, freedom of speech.

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Legal realities

Prosecution in the Public Interest by Susan R. Moody and Jacqueline Tomba
Scottish Academic Press, £12.00
ISBN 0 7073 0321 4
The Judge, Discretion, and the Criminal Trial
by Rosemary Pattenden
Clarendon Press: Oxford University Press, £20.00
ISBN 0 19 823373 7

To the outsider, and even to many lawyers, the law is thought to represent a fixed code, the evolution of which has been inevitable and the implementation of which is unproblematic externalization, divorced from movements within society, relieved.

The successful selling of this image over the years has stifled examination of the nature of the trial system and of the structural allocation of power within it. These two books, each of which represents a different tradition of legal inquiry and is concerned to establish not the assumed fixed character of legal rules but the amount of discretion accorded to officials within the legal system, provide small but revealing insights into legal reality.

The book by Susan Moody and Jacqueline Tomba, an analysis of decision-making by Scottish prosecutors, is of particular interest because of proposed changes to the English prosecution system and the fact that the Scottish procurator-fiscal system has often been put forward as a model which should be followed in England. This study is a sharp reminder of the dangers in assuming that there is a necessary correspondence between private behaviour and public image; practice and principle.

In principle, the procurator-fiscal is responsible for the investigation of and the prosecution of all criminal offences committed in his district. He decides whether or not to prosecute, on what charges, by which form of procedure, and to which criminal court. Subject to limited constraints imposed by criminal law and procedure, he has considerable autonomy in carrying out these responsibilities. The police are in law subordinate to him.

practice reveals a very different picture. Fiscals, in making the key decisions about whether to prosecute, choice of charge and choice of venue, are largely dependent for the information upon which they rest their decisions upon the agency which reports to them. In general this means that the police, as reporters, have a crucial influence. Police reports tend to be stereotyped, directed towards minimizing uncertainty and maximizing the strength of the case for the prosecution. This, in combination with the fact that fiscals generally hold the police in high regard and are pressured by case numbers towards bureaucratization, produces routinized, conveyor-belt decision-making. In the event, exercise of the discretion not to proceed is invoked comparatively rarely: fiscals prosecute. The selection of the appropriate forum for trial is, similarly, conducted within a particular structural and ideological context, and fiscals are heavily influenced by their own evaluation of what is a just sentence. On the other hand, it emerges that trial-avoidance mechanisms (principally charge-bargaining) are widespread, triggered by defence overtures, based upon "trust" and founded in shared understandings and mutual interests with defence lawyers: fiscals are prepared to exercise considerable discretion in bypassing the trial system by negotiating over pleas.

In the rhetoric of the Scottish criminal justice system and in the eyes of many reformers elsewhere, the fiscal is an autonomous, independent guardian of the public interest standing between the investigation of crime and the disposition of charges within a court setting. This book strongly suggests on the contrary that fiscals do not exercise any meaningful control on the investigation of crime but are instead wholly reliant upon the police construction of what took place, that fiscals only exceptionally decide not to proceed and, and that central decisions are routine and not the product of legal expertise and independent judgment.

Any move in England towards a national prosecuting system must take into account the findings of this very interesting and readable book. In particular, the assumption that the creation of a new body of public prosecutors will produce a different kind of decision-making from that which obtains under the present system in which there is a mixed client relationship with the police, must be abandoned, and attention must be switched instead to the power effectively to control the destiny of cases by those who have the responsibility for collecting the information at the investigation stage.

Rosemary Pattenden's objective is much more limited but the implications of her book are equally important. Her main concern, in an examination of English and Australian case-law, is to set out and describe the more important discretions which may be exercised by a judge in the course of a criminal trial and the known principles by which they should be exercised.

Though one might quarrel with some of the discretions Pattenden makes (as, for example, the rather arbitrary exclusion of any analysis of discretion in sentencing), the text is comprehensive and workmanlike; it should prove a useful source of reference (in thesis style; there are some 75 pages of footnotes). In criminal procedure and evidence courses.

What emerges most clearly is the extent of the discretion given to, or rather, taken by, judges in the English criminal setting. Discretions relating to the rejection of allegations of pleas, the exclusion of prejudicial evidence, the questioning of witnesses, the discharge of jurors, and the summing up of evidence are just a few of the matters meticulously catalogued. Given the enormous discretions available, tantalizing questions (with which Moody and Tomba are not concerned) are concerned are raised about the unknown principles which guide judges, the ideological context in which judgments are made, and the effects of all this on the dynamics of, and power relationships within, the trial system.

Michael McConville

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BOOKS

Meaning to say; saying to mean

Understanding Language: towards a post-Chomskyan linguistics by Terence Moore and Christine Carling
Macmillan, £17.50 and £5.95
ISBN 0 333 27188 2 and 33108 7

Moore and Carling's *Understanding Language* (surely the third or fourth book to come out under the same title in the past fifteen years) is a critique of the Chomskyan "paradigm" which dominated linguistics for most of that period.

Supporters of this paradigm have described Chomsky as the initiator of a "revolutionary" break with his Descriptivist American predecessors. This is wrong, according to Moore and Carling: Chomsky retained the Descriptivists' fundamental axiom that language is fruitfully analysed in terms of the grammatical distribution of forms, ignoring their meanings. But in reality meaning cannot be kept out. The Descriptivists' practice belied their principles. Chomsky tried to take this principle more seriously, and was forced as a result to "idealize to irrelevance". We can now see that meaning must be central in any worthwhile linguistics; and that implies that we must abandon Chomsky's rigorously axiomatized, hypothetico-deductive style, since meaning is too shifting and personal to permit such an approach. Moore and Carling conclude with some admittedly tentative speculations about what a post-Chomskyan linguistics will look like.

This is a work we have been hearing frequently in recent years. It is a popular story: since scientific linguistics began to be widely taught, to people with literary interests, its apparent determination to ignore all the most humane aspects of language has caused linguistics to inherit the reputation of economics as the "dis-mal science". No doubt the subject was oversold. But to say that a discipline deals with issues that many people find unappealing is not to say that the discipline is invalid in its own terms. Moore and Carling's

account of the recent history of linguistics does not persuade me.

On their last point, certainly, I agree with them; as Colin McCabe puts it, at the semantic level there is no systematical Saussurean *langue* underlying the shifting flux of *parole*. Outside the parochial world of linguistics, the inapplicability of rigorous scientific techniques to meaning in natural language has been something of a cliché for decades if not centuries.

But this might be taken to lend weight to the principle that grammatical analysis should be purged of reference to meaning, so as to yield a "double" subject. Moore and Carling suggest that the Chomskyan example demonstrates that this is impossible. I would reply that the Chomskians have scarcely made the attempt.

True, Chomsky often says that he believes in studying grammar apart from meaning. His practice has consistently been otherwise. One of the classic arguments for transformational grammar was the need to formalize the intuitively-perceived relationship between active and passive sentences – i.e. the semantic relationship of paraphrase. From the first, Chomsky has been interested not in whether his grammars generate the correct class of word-sequences, which is an objective, grammatical issue, but in their "strong generative capacity" – in whether they assign structural analyses to sentences which coincide with speakers' intuitions, which are surely based on meaning. If Chomskyan linguistics suggests that meaning cannot be kept out, it is because the Chomskians have unconsciously chosen to bring it in while denying that they are doing so.

Moore and Carling would reply that the Chomskians could not help bringing meaning in. But Moore and Carling, like Chomsky, underestimate the feasibility of objective grammatical research. For instance, they complain that Chomsky's formalized grammars ascribe theoretical legitimacy to constructions which have "no counterpart in natural languages"; their example is multiple centre-embedding. This is the inclusion at several levels of a construction in the middle of a construction of the same grammatical type, as in the rabbit that the girl that the cat ignored pursued dropped a glove. For almost thirty years linguists, including myself, have argued about whether multiple centre-embedding should be regarded as grammatical; this arduous debate has now been rendered pointless by a paper in the journal *Lingua* by Anne De Roock et

al. which for the first time asks whether such constructions actually occur in real life and finds that they do, frequently.

Moore and Carling say many perceptive things about the unsatisfactory current state of linguistics. But the trouble with the method they ascribe to Chomsky is the same as the trouble with Christianity: it hasn't been tried.

Geoffrey Sampson

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Piaget's impetus

Piaget: issues and experiments edited by Peter Bryant
British Psychological Society, £5.95
ISBN 0 901715 16 6
Jean Piaget: consensus and controversy edited by Sohan Modgil and Celia Modgil
Holt, Rinehart & Winston, £17.95
ISBN 0 03 910352 8

Few would deny, I think, that Piaget was one of the great minds of the twentieth century. His interests were wide, ranging from variation in plants, through variation in snails, to the child's development of knowledge, the historical development of knowledge, and the application of his ideas on these subjects to such practical problems as education. Behind it all, as he frequently protested, was a restless urge to find out about knowledge, how we know, the status of what we know; Piaget was always first and foremost an epistemologist, albeit a practically and experimentally minded epistemologist.

Throughout his long working life Piaget wrote 1200 words a day. The body of his work – experimental papers, experimental monographs, and theoretical texts – is thus vast. It is, however, dwarfed by the ever increasing array of books about Piaget, particularly about Piaget the child psychologist. Modgil and Modgil, already gully of nine volumes on Piaget, here present a volume considering a slightly broader perspective, including as it does chapters on philosophy and special education; the Bryant volume is more exclusively concerned with Piaget the developmental psychologist.

The Piaget industry, it seems, is beginning to verge on the Freud industry. A great many PhDs are acquired by doing something vaguely Piagetian. A great many university lecturers make their living by expounding Piaget. Positions are taken; one is pro or anti-Piaget. This vast industry – and it is vast as any volume of the *Social Sciences Citation Index* will show – is largely a betrayal of the man himself and a traduction of what psychology in 1983 ought to be about.

On the betrayal of the man I would say that Piaget's most outstanding characteristic was his attempt to make progress. The last talk he gave was an attempt to resolve a theoretical problem he raised in the 1940s, a problem re-raised by myself among others in the 1970s, the problem of why young children sometimes seem to do better than older children on the same task. The novel attempt at resolution, from a man in his eighties, was original and is plausible. He was also not bound to his own experimental results. In my personal experience two of his own PhD students produced results showing that in both cases his own basic experiments did not have invariant outcomes and that the theoretical consequences of both would have to be rethought. In both cases he was delighted: in one case he said he was too old to do the rethinking; in the other – ten years later – he did the rethinking. Why then is it that the Piaget industry concentrates on bits of Piaget's work, mostly work done in the 1930s? Why are the advances ignored? Why are the changes ignored?

There are answers to these questions, the first of which should be trivial, but is not. Piaget wrote in French. A great deal of his work is still untranslated. A great deal of it, though, has been translated. (My favourite instance of the latter is the translation that should have read "one of my former experiments" which came out as "one of my ancient experiences".) Non-French readers are thus at a disadvantage. A more significant answer has to do with the betrayal of psychology as it is today. When Piaget's results, every one of them, were first published, they upset *someone*. The initial response to those was to show that the experiments were wrong. In his first major book he argued that children were in a significant way more or differently egocentric from adults. One critic answered this by claiming that children did not use the word "I" more than adults. "So what", can only be anyone's reply to such misinterpretation; whether will-

ful or not, the misinterpretation still persists (viz. the article by Margaret Boden in the Bryant volume).

The other criticism that emerged was that at some ages under some circumstances children could do better than Piaget said they could. While Donaldson, in the Bryant volume and indeed Bryant himself, are not as extreme in their interpretations of their work as leader writers in *The Daily Telegraph* have been, such results are seen as significant. Why? In the 1940s Piaget produced such results himself, and did not attempt to conceal them. In fact, all such results can fit within a theory of development.

Piaget's theory was, beyond all else, developmental, as Bryant emphasizes. Change is a consequence of prior change and the situation. The emphasis on development is not missing from most of the papers in these two volumes. In more than one case a two year segment of development, well described in the original Piaget, is reduced to a one hour or one half-hour of testing of a segment of a sequence, with the different results seen as somehow reflecting on a theory that, however inadequate, was intended to cover change from conception to death.

It will be clear from what I have said thus far that I am not enthusiastic about either of these volumes or indeed about the genus from which they spring. Those who are unfamiliar with Piaget would do better to begin with either his classic *The Psychology of Intelligence* or the book with Bärbel Inhelder, *The Psychology of the Child*. Those who are familiar with Piaget will find several thought-provoking articles in these volumes. They might read them and think about how best to continue the massive impetus to the understanding of development that Piaget gave us.

T. G. R. Bower

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A second edition of T. G. R. Bower's *Development in Infancy* has been published by Freeman at £14.80 and £6.90, a major addition to the book being a chapter on social development.

A collection of essays by leading philosophers on the importance of Frendian theory for the understanding of the mind has been edited by Richard Wollheim and James Hopkins and published as *Philosophical Essays on Freud* by Cambridge University Press at £25 and £7.95.

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BOOKS

Partisan polemic

Partial Progress: the politics of science and technology
by David Allured
Joseph Selowitz
Pinto Press, £4.95
ISBN 0 85104 385 5

This book has a clear polemical purpose: to attack "the myth of a classless, unbiased, inherently progressive science and technology". To the authors, it is "immediately clear that the wider interests of the mass of the people have been systematically ignored in favour of profit, power and privilege for the few". The text embarks on a detailed analysis to demonstrate how class interest expressed across the spectrum of science and technology, "from the physics of elementary particles, to occupational health and safety research".

Take, for example, Davy's miner's safety lamp. Contrary to popular belief, far from reducing accidents, there was an increase in explosions and fatalities after the introduction of the lamp. The explanation is not hard to find: the miners, who were used to the lamp, were now faced with large amounts of an explosive mixture of air and methane. The great attraction of the lamp for the colliery owners was that it allowed them to reopen extensive and valuable workings. But neither the miners nor mine inspectors were convinced. They argued that the lamp was by no means reliable, and that the real problem was lack of adequate ventilation. In short, Davy accepted the mine owners' brief to build a lamp that would work in the methane-rich atmosphere. He did not attempt to tackle the fundamental problem of safety in mines.

The most overwhelming evidence of the way in which science and technology has been and is harnessed in the service of powerful interests in society is the analysis of research and development (R&D). In Britain in 1980, 55.6 per cent of the total government R&D budget of £2,690 million was spent on defence. Of the remainder, very large amounts were allocated for economically-orientated research, such as nuclear energy and aerospace. Only 15 per cent went to the five research councils. And even here, there was a heavy emphasis on applied research. The argument in a nutshell is that class interests direct both the broad formulation of research problems and the development of new machines. "The labour of scientists and inventors is channelled by the market for inventions, by the available jobs, and by education and training, to work on the problems of concern as defined by the dominant class in society".

The case is further reinforced by evidence to demonstrate that science and technology are also harnessed by capital to strategies aimed at the control of labour, by deskilling, the displacement of workers, and by the development of process technologies which strengthen managerial control over workers. A chapter on micro-electronics cites numerous examples: in printing, car manufacture and communications. Numerical controlled automatic techniques are given as examples both of deskilling and of increased managerial control. The authors quote Lord Spens speaking in the House of Lords debate:

"Silicon chips do not belong to unions. They do not go on strike. They do not ask for more money, nor heated offices, nor tea breaks. They are very reliable and do not make mistakes. They need very little space to function. They are cheap. They use very little energy and they are here now waiting to be brought into use."

Science also functions as part of the dominant ideology, ideologies as defined by the authors, are not necessarily true or false. Rather they are partial views in the sense that they express the view of only one group or class. A number of examples are explored: IQ research, sex

role and gender research, sociobiology, occupational health research. The arguments here are less clear. Some research is criticized as bad science. An example is "the unsupported hypothesis that the supposed differences between boys and girls are due to hormonal differences". But the main thrust of the critique is rather that the researchers themselves are embedded in ideologies and social practices of class and inequality, and their findings reinforce such ideologies and practices.

Any simple view that science and technology are in some sense neutral and outside politics cannot survive such an analysis. Science and technology are human activities, harnessed to serve ends, values and interests. The "distanced" pursuit of knowledge and innovation characterizes only a small and diminishing proportion of scientists. The case looks overwhelming. Despite this, however, the book succeeds in its purpose in challenging the myth of an "unbiased, inherently progressive science and technology".

The difficulty with any polemical text is that it is itself partial and biased. Examples are deliberately selected to prove the case. Despite its scholarly style (there are 133 footnotes to chapter one) there is no attempt at even-handed weighing of all the evidence. To pick a few examples from the corpus of psychological research which exemplify underlying racist or sexist ideologies is not sufficient to sustain such sweeping condemnation of science.

In short, the book will provide ammunition for the converted. It will certainly help those in trade unions, women's groups and black organizations for whom it was presumably especially intended. But it could well fail to carry much conviction with a wider audience. This is a pity: the case deserves a more convincing statement. I would hesitate to recommend it to my first-year course for engineers in technology and society precisely for this reason. But the text should find a place in courses on the social relations of science where it can itself form the subject of more critical analysis.

Stephen Cotgrove

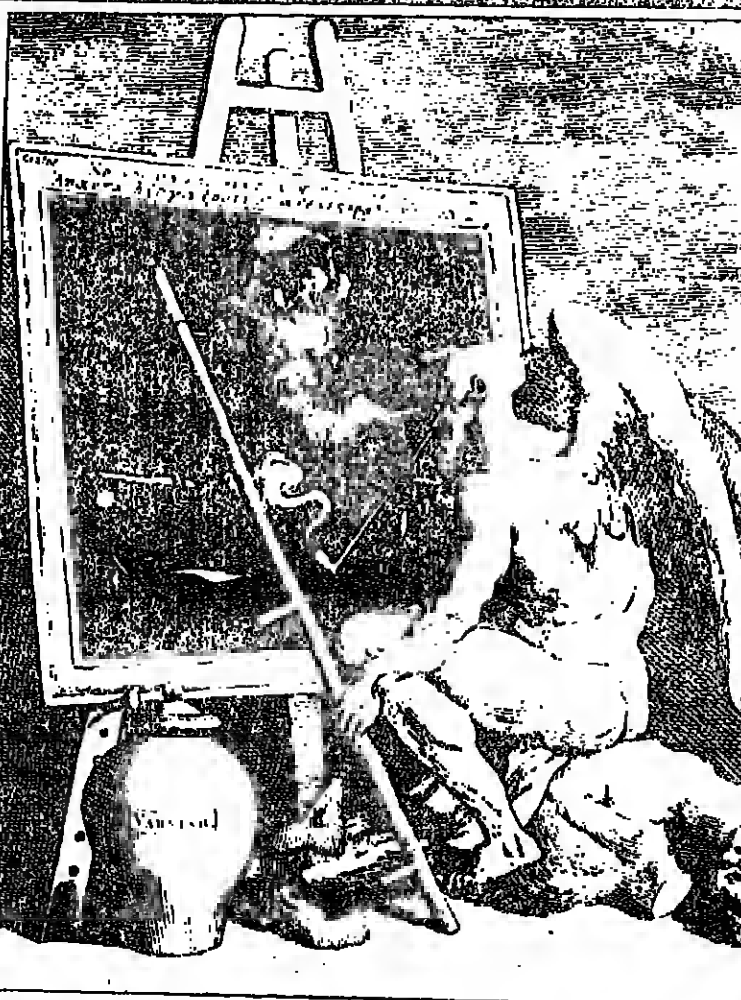
Stephen Cotgrove is professor of sociology at the University of Bath.

Forgotten founders

Science in Context: readings in the sociology of science
edited by Barry Barnes and David Edge
Open University Press, £6.95
ISBN 0 335 10054 6

If it is true, as A. N. Whitehead remarked, that "a science which hesitates to forget its founders is lost", then judging by this book the sociology of science is very much alive. Just 10 years ago Barry Barnes published a collection of readings, *Sociology of Science* (Penguin) but only two of the 22 contributors to that earlier volume remain. Gone are Ben-David, Habermas, Kuhn, and Merton, among others. Making their appearance are representatives of the younger generation of sociologists, many of them British (such as Harry Collins, Steve Woolgar, and Brian Wynne) for whom the processes by which scientific knowledge is generated and established have become central concerns.

A second criterion also suggests the vitality of the field. The sociology of science today is characterized by a fruitful clash of alternative orientations and interests. There is a theoretical pluralism born in part of the rise of alternatives to functionalist sociology, drawing upon interactionist and phenomenological perspectives. The uncertain boundaries of the field also contribute to this conceptual diversity, for sociologists of science have to some extent also been influenced by problems of and for science policy. Thus, it is difficult to make any sharp demarcation between studies of "the science/technology relationship as an interaction between what are at least partially distinct forms of culture" (included here) and the work of, say,



'Tone Smoking a Pipe', by William Hogarth (1761), a satire on the idea that all things are more valuable than we are. Hogarth likens time to an unreliable picture dealer who blows smoke on the landscape and drives his art on this elusive theme selected by P. T. Laursberg, mostly from the point of view of physical science although the wider philosophical implications are mentioned. Published by Adam Hilger at £13.95.

Schönberger and Rosenberg on the economics of technological change. Barnes and Edge are concerned to demonstrate the distinctiveness of technological culture and that it is this - rather than science - upon which innovation largely draws. An innovation then becomes a "development" of the existing technological culture brought about by "the pull of external demand" or "the independence of different aspects of technology". Precisely these questions are at issue in much economic writing. On the other hand, the sociology of science has perhaps more consciously drawn upon recent work in history and philosophy of science.

An important consequence of the decline of the functionalist approach which underpinned the pioneering work of Robert Merton and his collaborators has been the rise of a view of science as "conventional", "negotiated". Scientific knowledge comes to be denied the privileged status accorded it by most philosophers and (if only tacitly) by most sociologists. Scientific theories and scientific practices are then aspects of the culture of a particular community, and open to be studied by similar methods. How is this culture transmitted and how is it transformed? What on the one view were the norms of science, on the new view are cultural resources to be used in negotiation. From this view have come a number of interesting studies designed to show "the conventional character of scientific knowledge" and to explore the "processes of negotiation". The editors have made a good selection from this literature.

However, they have attempted to do more. They have also tried to show the relevance of this perspective (which is their own) to a wider range of issues. The interactions of the scientific culture with the broader culture is the heading under which discussion of science/technology is presented. Here technology is presented as something culturally distinctive from science, something other than the "applied science" which some writers make of it. Such a view fits not only with what economists have to say but also with the historical and anthropological discussions of technology in other times and in other cultures. The ways in which technological change does, sometimes, draw upon science then become a matter of study.

Equally complex, and somewhat contrary to the popular view, is "scientific expertise". When scientists advise upon some controversial and difficult issue of a technical kind, what is the status of the advice which they give? There have been a number of studies of the role of scientific expertise in controversies surrounding nuclear power, the use of DDT, the introduction of new drugs, and various others. They mostly cast doubt on the possibility of an objective, purely technical expert view. Of course, scientists can still be experts, and society will continue to regard them as such, but sociological work shows that their expertise is never the dispassionate appraisal that we tend to assume.

The selection presents a particular perspective on the sociology of science. This apparent one-sidedness is mitigated, however, by the lucidity with which the case is presented in linking editorial material, and by the fact that the perspective happens to be the source of much of the most interesting work now being done in the field. The book provides a challenging introduction to the sociology of science and deserves to be widely used.

Stuart Blume

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Fortuitous parallels

Psychological Life: from science to metaphor
by Robert D. Romanyshyn
Open University Press, £11.95
ISBN 0 335 10108 9

Romanyshyn tells us that he has two aims. The first is to provide "a historical reflection which does the psychological work of re-membering how we have become what we are... not unlike the work of psycho-analysis performed upon the cultural dream of psychology". The second "is to show how the psychological life is a reality between the material and the mental, that is a metaphorical reality". Disentangling the metaphors he finds in the development of science is to provide for him a way of understanding the phenomenology of the present.

There are interesting and some-

times moving things here, but it is not at all clear that psychoanalyzing the past is an intelligible activity. This book belongs within that tradition that looks back to a paradise of associated sensibility lost to us by the rise of science (and perhaps of democracy too) during the sixteenth and seventeenth centuries when we became, not just ghosts in machines, but alienated from the imagery of experience (which is largely what he means by "psychological life") by our guilty knowledge of scientific reality.

But nostalgia is a poor guide to history. The late seventeenth century certainly did not look back in this way. Bishop Sprat wrote *History of the Royal Society*. Romanyshyn quotes, and there to return back to the native country and shortness when men delivered so many things in an equal number of words. But for Romanyshyn "... the time may be propitious for a recovery of psychological life as metaphorical reality". If the motto of the Royal Society was nullius in verba, Romanyshyn's would be to take all varieties of idiom and cliché with the same seriousness that is the poetic imagery of the early seventeenth century.

We are told in a foreword by J. H. van den Berg, who seems to have been his mentor, that Romanyshyn's book gives "Kuhn's paradigm... the significance of reality", and one can only hope that the author would not welcome such an encomium, just as one would hope he would reject the astonishing observation that before Harvey not even a physician "mentioned the sound of the heart beat", but in fact Romanyshyn is both philosophically and historically naive.

He sides rightly with those for whom metaphor cannot be simply reduced to a rhetorical device for expressing those comparisons that might otherwise have been expressed literally, and he is right in seeing this as no important component of thought. But his insistence on the "reality" of what he calls "psychological life" (where for him such language has a central role) comes to little more than the observation that we really do make use of metaphorical idioms: which even to pleneologists would constitute a starting point rather than a conclusion.

Similarly, the historians' questions - who thought in certain ways when and whether apparent parallels are merely fortuitous - do not seem to constrain his curiosity. What we have instead are the sort of observations that too often disgrace a certain kind of television programme; and we are reminded that *De Revolutionibus* and Vesalius' anatomical studies were published in the same year, so (but the force of the "so" is left unclear) since Copernicus can "displace with the living human body as a ground for knowledge... it is to be found on Vesalius' dissecting table... Vesalius' body could not appear on a stationary earth". And we are told that "Charles... is perhaps the first... victim... of the new false equality which appears through the pumping heart" and that "because systole and not diastole is [for Harvey] the basic motion of the heart... the human heart becomes empty in the seventeenth century. Human existence becomes empty and lonely". It is not clear or what grounds the reader is supposed to believe or disbelieve all this.

Of course, analogies between scientific change and "changes in thought elsewhere are worth exploring. But, as Christopher Hill put it in his own essay on Harvey's "dethroning of the gods", such analogies "make things seem more reasonable, less shocking, in a world still dominated by analogy". Neither philosophical questions about what it might be for something to be reasonable to think - nor the parallel historical constraints (that is, reasonable to whom, and why) affect this writer. And this is a pity not just because his undoubtedly interesting book may impress unwary readers of an Open University publication, but more importantly because it may tend to give the important inquiry he could have engaged in an undeserved bad name.

Andrew Harrison

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BOOKS

ENGLISH

Against nature

The 'Scientific Movement' and Victorian Literature
by Tess Cosslett
Harvester Press, £14.50
ISBN 0 7108 0302 8
Romantic to Modern Literature: essays and ideas of culture 1750-1900
by John Lucas
Harvester Press, £18.95
ISBN 0 7108 0405 9

With rare enough whimsy T. H. Huxley once pictured Victorian science as a Cinderella neglected and persecuted by her ugly sisters, Theology and Philosophy. In her garret Cinderella-Science dreams her dreams of truth "out of the ken of the pair of shrews who are quarrelling downstairs", for it is only she who "sees the order which pervades the seeming disorder of the world". In her often illuminating study Tess Cosslett sets out to challenge the commonly held belief that Victorian writers remained under the sway of the ugly sisters rather than under that of the true secular princess, Science.

As Dr Cosslett's brief but informative first chapter demonstrates, the visions of the Romantic poets seemed to some Victorian thinkers to have been confirmed by scientific investigation; it was even asserted that the imagination of the modern scientist precisely paralleled that of the poet. Both shared an organic unity from what the imagination seized as truth, or, as Frederick Harrison concluded in a review of G. H. Lewes, "our sciences are verified poems".

Having succinctly suggested the force of such parallels between art and science, Dr Cosslett turns to specific examples. Tennyson's *In Memoriam*, *Middlemarch*, poems by Meredith and early novels by Hardy, it is an interesting if highly selective range of writers. There is much that is striking in the comments on Tennyson's grasp of pre-Darwinian evolutionary thought, though it could be argued that the chapter underplays Tennyson's doubts concerning both a scientific thesis and a theological assertion. Dr Cosslett is original too in her approach to George Eliot, though an analysis of the intellectual context of *Daniel Deronda* might have proved a conditioning balance to what is claimed for *Middlemarch*.

The comments on often overlooked poems by Meredith serve to place him centrally in a line of informed observers of nature, though if Meredith found the order he perceived artistically useful such assurance seems to have unsettled Hardy. Dr Cosslett separates the gloom of Hardy's personal vision from the evolutionary optimism of his scientific understanding, and she usefully relates aspects of the early stories to images suggested by his agnostic mentor, Leslie Stephen.

Dr Cosslett's study is a valuable complement to the rich variety of the collection of essays edited in 1977 by Kroeber and Tennyson under the title *Nature and the Victorian Imagination*. Significantly, though, the most commonly cited writer in that anthology, Ruskin, is notable for his absence from this new study. So are those active naturalists and priests: Kingsley and Hopkins. As a consequence a reader may be left with the impression that Dr Cosslett's focus is too narrow and exclusive.

Kingsley has his assured, though sometimes marginal, place in John Lucas's new collection of "essays and ideas of culture 1750-1900". The writer who emerges centrally from the volume is, however, Dickens - for Lucas "the greatest of all English novelists". Lucas's awareness of a culture which flourishes beyond strictly academic confines is proclaimed in the note struck in his sixth chapter to the effect that "nearly all the greatest writers of the past 200 years - Blake, Dickens, Hardy, Lawrence, Yeats" managed to avoid

"the kind of [educational] experiences we expect our writers and intellectuals to enjoy". As the rigorous and challenging introduction asserts, there is a real distinction now to be drawn between traditional educational experience, however eccentric or casual, and the outright failure of education. The 19thc, Lucas suggests, "was the decade that did a great deal to raise ignorance to the level of sanctity", the time when "a tradition which had been taken for granted, a respect for knowledge, a concern over facts, and a reverence for memory... was abandoned".

The volume, taken as a whole, serves as a reassertion of these traditional educational values. The essays range broadly, scrupulously, and in a scholarly, but always readable, manner over a wide range of literature. They are refreshingly discriminating, argumentative and stimulating, qualities which are especially evident in the two essays with which the volume opens and in the interesting study of Forster and Wagner with which it closes. It is, nevertheless, a pity that the opportunity was not taken to date individual essays or to suggest the contexts which gave rise to them. The chapter entitled "The Victorian and the West", for example, is rather mysterious in its intentions: it celebrates the architectural and sanitary triumphs of the unsung Victorian engineers of the Midlands but it never glances at the great London pumping-stations, nor, despite its broad title, does it extend its

theme outwards to the popular taste for sea-bathing. Something might also have been said of the extensive use in Victorian literature of pre and post-Darwinian imagery derived from seas and rivers (Arnold's river of life, or George Eliot's Floss, for example). Nor does Lucas pause to reflect on the fact that the water used for illustration is traditionally slightly saline. Despite his clear concern for facts, it is a pity that the sweep of the last essay is impeded in its opening paragraph by a loose reference to Albert Edward, Prince of Wales, simply as "Prince Albert", and by a witty swipe at a Kingsley who was very seriously concerned both by the conditions which gave rise to urban cholera and by the bad state of his own drains at Eversley Rectory. One might also have hoped that the discussions of Dickens, lively as they are, had been revised in the light of the new *Pilgrim* volumes of the letters.

I must also admit to being puzzled by the statement that "when the Houses of Parliament burnt down in 1833, Dickens was among the cheering onlookers". Parliament burnt in 1834 and I have found no source which suggests that Dickens was actually present, whether cheering or not.

Andrew Sanders

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Words, words, words

The Literary Language of Shakespeare
by S. S. Hussey
Longman, £4.95
ISBN 0 582 49228 9
Shakespeare and the Rhetoricians
by Marion Trousdale
Scolar Press, £15.00
ISBN 0 85967 654 4

"Othello kills Desdemona because he lacks what was obviously felt to be an essential knowledge of language skills." This rather oblique view of the tragedy is offered by Marion Trousdale. What she means is that Othello is deceived by Iago because he fails to recognize "a Renaissance fact of language: that it is insubstantial and manipulative; that it does not represent reality but presents a representation of reality". "Viewed as a tradition of rhetoric," writes Dr Trousdale, "Shakespeare by means of Iago shows how evil rhetorical method is, but how effective it is in the most unpromising situations such rhetorical method can be".

It is hard to resist the notion that this is how a knowledge of the rhetorical tradition illuminates the play, though there are better ways of understanding Shakespeare's art.

Yet Stanley Hussey is surely right to argue that a familiarity with sixteenth-century attitudes to language and literary composition, including the formal art of rhetoric, should illumine "the risk of partial or unbalanced literary judgments" of Shakespeare's work. Professor Hussey provides a very useful introduction to a vast and complex subject. Beginning with the enriched vocabulary of Elizabethan English in relation to Shakespeare's own employment of latinate diction and "copiousness", the book moves to a consideration of some uses of syntax and grammar, elaborated according to the schemes of rhetoric, and then comes to focus on Shakespeare's adaptation of established styles at different stages of his career. Without being too technical, Professor Hussey presents the student reader with a wealth of information which is digestible because it is illustrated with well-chosen examples and treated with critical sensitivity and insight.

It is this critical sensitivity which is too often lacking in Dr Trousdale's treatment of literary texts. As a critical theorist, she argues systematically to define "a view of language that seems to me to entail a view of the plays." From the rhetoricians she de-

rives the principle that language is artificial, distinct from its subject (as opposed to the Coleridgean concept of the inseparability of subject and expression) and a rational instrument structured to effect certain ends. Erasmus, for instance, provided schoolchildren with formulae for saying the same thing in many different ways, and exemplified the art by producing 148 variations on the theme, "Your letter has delighted me very much." As intellectual categories, the logical "places" of invention provide so many frames of reference by means of which things may be described. Such an emphasis on variation extended as well to copiousness of matter: separate and even contradictory truths might be perceived in the same fable, as Erasmus demonstrated in construing the death of Socrates. The pluralism of rhetorical method is, in effect, a kind of structuralism, different from that of the twentieth century in its insistence on the distinction between words and things.

This brief summary hardly does justice to the density of Dr Trousdale's argument, or to the massive documentation supporting its history. But when she turns to the plays themselves, the old issue of the relationship between theory and practice raises itself. How far are pedagogic precepts relevant to Shakespeare's art? His grammar school training in rhetoric clearly served him well as a foundation, and it shows through in his early plays, particularly when he is making fun of it. Not surprisingly, Dr Trousdale writes appreciatively of the "pleasurable puzzles" of *Love's Labour's Lost*. Less adequate to the occasion, however, is her didactic interpretation of *Measure for Measure*, which treats the Duke as a choreographer enabling us "to comprehend the action intellectually." There is more to this enigmatic character and his questionable contrivances than Dr Trousdale allows. "The Elizabethan audience," she assures us in another of her startlingly abrupt assertions, "and more particularly James I, was meant to learn from the play in much the same way that Angelo and Isabella appear to learn." Leaving aside the grotesque assumption that Shakespeare's palpable designs on his monarch, one surely hopes that no member of any audience learns "in much the same way" as Angelo and Isabella. Since Dr Trousdale uses the plays as "examples" of, rather than "evidence" for, her rhetorical method, the method itself is presumably not contravened by any limitation in her reading of specific plays. But what is the use of a model which generates such blinkered criticism?

D. J. Palmer

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Out of range

The Cave of Making: the poetry of Louis MacNeice
by Robyn Marsack
Oxford University Press, £12.50
ISBN 0 19 811718 3

"I would have a poet able-bodied, food of talking, a reader of the newspapers, capable of pity and laughter, informed in economics, appreciative of women, involved in personal relationships, actively interested in politics, susceptible to physical impressions." So wrote Louis MacNeice in *Modern Poetry*. Robyn Marsack picks up very little of this potential in her book on MacNeice.

The *Cave of Making* opens with an account of MacNeice as divided in his early experiences between Ireland and England and between different kinds of Irishness, but it does not go on to relate the poetry to such personal and social contexts, except erratically and sketchily. Marsack hardly uses the Irish point: the politics and economics of the whole period after the war get no space at all; and as for women, we are told nothing of how MacNeice married and broke up with his first wife, or how he married his second wife, or of the experience which inspired "The Introduction". Marsack alludes to but does not investigate MacNeice's uncertain dialogue with Christianity. Even literary relationships are hardly touched upon - Dylis Thomas, for instance, who MacNeice said "made as well as any"; and the whole charming literary scene of the fifties.

Dr Marsack's approach, despite her opening, is to go through the poems commenting on the success or otherwise of their use of language. Some of this is well done in its own terms. There are sensitive and evocative observations upon the early poems, *Autumn Journal* and the last two volumes of poetry in particular ("This sensation of being a stranger

to his own life troubles the poems" in *Variations*). Also, a good deal of interesting material is quoted from previously unpublished drafts. My objection to her approach is not that there is no role for formalist criticism of poetry, but that the handling of it here is not rigorous enough. At a time of considerable critical dispute about how to deal with a text Dr Marsack shows no awareness of modern (or indeed older) studies of the way language works, and does not expose the principles of her judgments for consideration. All too often we have this kind of gesturing towards and sliding between issues. He hints at the complexities of his relationship with his father, and the metaphysical reaches of their skirmishes, without going beyond the simple familiarity of the scene he sets. The apparent ease with which he handles the *terza rima* form was perhaps his first indication that he could use it at much greater length, although not, it may be thought, to such advantage.

We get no further elucidation of the metaphysical skirmishes or of the use of *terza rima* in the poem in question, and the complexities of the relationship with the father are not pursued. I cannot say that this study makes MacNeice appear more substantial and important in 1983. Yet there is a moving and significant mystery about the man who managed to live and write without adopting a commitment in the thirties when Yeats said it helped to have a belief, and then fell to pieces after the war when commitment became unfashionable, allowing himself to be incorporated into the BBC. We might consider, for a start, D. B. Moore's remark, following Auden: "We must realize that it is in the atmosphere of intellectual shame that the poetry of the war had, inevitably, to be written". If we fix MacNeice in his context he might appear not a minor poet but a most illuminating figure in twentieth-century literature.

Alan Sinfield

Alan Sinfield is reader in English at the University of Sussex.

James Joyce

Richard Ellmann

Winner of the Duff Cooper Memorial Prize for 1982.

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General editor: Stanley Wells

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Oxford University Press

BOOKS

ENGLISH

Stage managing

"The Winter's Tale" in Performance in England and America, 1611-1976 by Dennis Bartholomeusz
Cambridge University Press, £37.50
ISBN 0 521 24529 X

The *Winter's Tale* has enjoyed a long history on the English stage. In contrast to a number of Shakespeare's plays, it has never been absent from a significant period either from the theatre or from critical discussion. But and justified in the eighteenth century, it became in Keats's hands in the mid-nineteenth century an archaeological showpiece, and with living and breathing the basis for a lavish pictorialism that enchanted Victorian and Edwardian. Not until 1912 did it recover something like its original form, by no means in mimicry of Elizabethan stage conditions, but in response to the life of the Shakespearean text. John Palmer gave it as his view, indeed, that Barker's interpretation was "probably the first performance in England of a play by Shakespeare that the author would have recognized for his own since Burbage".

The twentieth century has seen other distinguished productions besides Barker's, some of them in North America and some in England. The Festival Theatres in Connecticut, Ontario and Oregon have tended on the whole to treat the play fairly unreservedly. Though Audrey Stanley's Ashland production of 1975 gave the play's tragic aspects full weight, in England Peter Brook (1951), Peter Woolf (1960) and Trevor Nunn (1969) have all offered distinctive and distinguished interpretations.

Dennis Bartholomeusz narrates and documents this history with skill and knowledge. The range of reference is quite vast, to newspaper articles, memoirs and interviews, as well as to books and journals. Of course, Professor Bartholomeusz is at the mercy of his source material. Keats's production, of which on the whole he disapproves, is very well documented and so takes up a good many pages, while other, perhaps more faithful, interpretations have left on record only a faint impression. Occasionally, there are vivid first-hand recollections of performances, such as Taverer's account of Maeready in 1823 or Helen Faucit's description of playing opposite the same actor in 1837. But often the historian has to rely on rather perfunctory or prejudiced reviews. It is

noticeable how much more urgent the writing becomes when Professor Bartholomeusz describes the Trevor Nunn production he himself saw on tour in Melbourne. The enthusiasm and exact recall are impressive, though the judgment quoted with apparent approval from the *Australian*, "one of the great stage performances of the world" may seem extravagant to those who saw the same production in Stratford-upon-Avon.

Out of the stage history there emerges a convincing sense of *The Winter's Tale* as a quite deliberate mixture of theatrical styles and historical periods, a coherent incoherence that loses its significance when thinned up to meet the preferences of Victorian scholars or twentieth-century critics or directors (there is a noted adverse critique of the emblematic Trevor Nunn-John Burrell production of 1976). Professor Bartholomeusz writes a good deal about the value of his enterprise, and in the end offers a fairly muted justification: "on the whole, despite obvious dangers, criticism could profit by a close, an intimate acquaintance with good theatre". The worry is unnecessary: any competent reader of *The Winter's Tale* will find his sense of the play greatly extended by reading this book.

Despite occasional lapses of judgment, Professor Bartholomeusz gives all that his book's title promises. *Shakespeare the Director*, by contrast, is a sad disappointment. Dr Slater tells us that "this book is a study of Shakespeare's direction of his plays, analysing the implications of theatrical effects specifically engineered by him". In the event, the theatrical reality of his plays is rarely discussed. The chapter called "Position on the Stage", for example, turns out to be largely a familiar discussion of stage floors, discovery space, trap and gallery, coupled with some thoroughly ordinary discussion of the throne and of sitting down.

"Sitting down would appear to differ from the other positions an actor can assume on the stage, in that it is primarily realistic and simple." Similarly, the chapter on costume deteriorates into an unimpressive treatment of disguise. Throughout the work, the emphasis steadily drifts away from theatre towards the emblematic and the literary. Perhaps this is just as well, for Dr Slater shows little experience of theatre. The worst example comes in the chapter "Silence and Pause", where Dr Slater writes:

For instance, Clarence's murderer, doubled up by a sudden cramp of conscience, begs his accomplice: "I pray you stay a little: I hope this passion of mine will hold me while one tells twenty." There should, then, be a twenty-second pause, before the other's impatient demand...

A twenty-second pause would be sufficient in Shakespeare's theatre for murder itself to be committed, on stage or in the auditorium; even in the theatre of Harold Pinter the performance could scarcely survive.

J. R. Mulryne
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Lillah McCarthy as Hermione, in a production of *The Winter's Tale* at the Savoy Theatre in 1912.

Forerunner and ally

Coleridge, Language, and Criticism
by Timothy Corrigan
University of Georgia Press, \$15.00
ISBN 0 8203 0593 6

Surprisingly late in the day, critics with leanings towards deconstructive theory are discovering a forerunner and ally in Coleridge. This Coleridge, having been long admired as the representative of "English Romanticism" in its theoretical and critical aspect, and having been more recently placed (by such critics as M. H. Abrams and René Wellek) as a foremost example of European, or Anglo-German, Romanticism, is now being claimed as a venerable ancestor by the modern critical school, on the grounds that he licensed the reader, or reader-critic, to "half-create" the work of art as he reads it.

Timothy Corrigan avails himself of this licence in his analysis of the stages of Coleridge's career as critic, which he charts, reasonably enough, in terms of Coleridge's ever-elated but ever-shifting intellectual pursuits. Thus he looks at the political bent of 1790s, when Coleridge was at his most active politically; the psychological emphasis in the Shakespeare criticism of 1800-1812, when Coleridge was evolving his theories of mind in response to Hartley and Kant; the scientific interest of the 1810s and its fruitfulness for the deifications of poetry in *Biographia Literaria*; and finally the increasing absorption of the older Coleridge in theology, to which all other concerns, including literary criticism, were subordinated. Indeed, in one of the several moments of plain common sense in this book, Corrigan digresses, when discussing Coleridge's 1825 lecture "On the Prometheus of Aeschylus", that in it the conspiracy of the commentary against the text is overwhelming. What is most peculiar about his work during this period is the unusual extent in which he disregards the primary text and how completely his complex theological models and language usurp that text.

Corrigan's own study, however, sometimes commits the same sin, as when he illegitimately runs together the early poem "Religious Musings" and Coleridge's prose gloss explaining the otherwise gnomic political allusions in the poem. Corrigan does

not seem to see that if, as he approvingly claims, "Coleridge's critical commentary and notes are intended to give the poetry political meaning", the conclusion that any discerning critic of the poetry must come to is that it has failed as a means of communication in itself. Coleridge's critical commentary cannot "vitalize" the text of the poem unless it is read continuously with the text, in which case one is no longer responding to a poem.

Corrigan's aim is to "examine Coleridge's remarks on language", a task which he rightly says has been little undertaken by students of Coleridge. But Corrigan is not a linguist. His book contains no linguistic analysis of Coleridge's prose, and is, in fact, devoid of any close analysis other than that of certain terms which Coleridge imported from extra-literary contexts to his literary criticism, terms such as "egotism" and "benevolence" in the 1790s, and "polarity", "magnetism", and "electricity" in the 1810s. His discussions of these transferences of terminology are interesting, particularly in the chapter on science, in which he compares the terminology of Coleridge's "Hints towards a More Comprehensive Theory of Life" with that of the function and structure (these also being primarily scientific terms) of poetry in the central chapters of *Biographia Literaria*. He also writes well on Coleridge's early political criticism, noticing that Coleridge in the 1790s frequently "uses a poem merely as a window into the poet's heart, where Coleridge finds either a good, sensitive writer who will be a good, sensitive citizen or a hard-hearted egotist who will insidiously undermine society".

The whole collection is a considerable demonstration of the amount and variety of interest in the major English medieval author and of one critic's ability to elucidate and communicate this interest over the better part of thirty years. The idea of collected essays, however, sounds terribly final, an happy to assure his readers that Dr Brewer is alive and well and continuing to write about Chaucer.

S. S. Hussey
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Rosemary Ashton
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Chaucer's times

Tradition and Innovation in Chaucer
by Derek Brewer
Macmillan, £25.00
ISBN 0 333 28427 5

This is the first of two volumes which are to contain the collected essays (1981 to the present) of Dr Derek Brewer, printed, with two exceptions (one new essay and one which is here expanded) as they first appeared in a variety of periodicals.

The second volume will deal with Chaucer as storyteller: this one asks, in a sentence at the beginning of possibly his best-known essay, "Gothic Chaucer": "What is the general nature of Chaucer's works and its relation to his times?" Not so easy to answer. To say Chaucer is "conventional", of course, will not do. It denies him any personality and begs the question whether he is thought conventional simply because he has been more widely read than several of his contemporaries. Dr Brewer instead demonstrates the value of conventions as used by a major poet, when they both formulate and release the stock response.

Some of the essays discuss themes: children in Chaucer, honor in Chaucer, the idea of feminine beauty in Middle English literature. Here there is often illuminating comparison, for instance that Chaucer - unlike nineteenth and twentieth-century writers - never writes from the child's point of view. Other essays, such as "The Anning of the Whorl" or "The Reece's Tale and the King's Hall, Cambridge", are more factual: how literature may illuminate history. The views expressed are always anchored firmly to a close reading of the text, and if anyone thinks "themes and conventions" sounds all very general, he should read the sensitive discussion of Criseyde's position in Book IV of *Troilus and Criseyde* in *The Franklin's Tale*.

Do the essays date? In the earlier ones there is perhaps more reference to the story, more of what Chaucer doesn't do, or does less well than one of his contemporaries, than might be altogether fashionable now. But it has always been Dr Brewer's great virtue as a critic to raise the important questions to raise literature to both its own time and to ours. Two of the essays ask how we are to characterize Chaucer. Here I admit to finding the earlier (1974) "Gothic Chaucer" more immediately accessible than the later "The Aesthetic and the Modern" which asks us a general introduction to the whole collection. The former shows how inconsistent and even apparently incompatible elements may be sustained within the one work and how the resulting tension resolves itself. The latter distinguishes well enough "archaic" features of Chaucer's language from the modernization of everything to a general system, argument by analogy rather than by synthesis, a largely oral culture valuing repetition from "modern" or "scientific" (characterized by progressive change generated by self-criticism, hence accurate knowledge through print), but it might have been made easier by rather more examples and a less allusive style.

The whole collection is a considerable demonstration of the amount and variety of interest in the major English medieval author and of one critic's ability to elucidate and communicate this interest over the better part of thirty years. The idea of collected essays, however, sounds terribly final, an happy to assure his readers that Dr Brewer is alive and well and continuing to write about Chaucer.

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Moral Gower
Sections from books one, three, four, five, six and eight of *Confessio Amantis* are included in John Gower: selected poetry, edited by Carole Weinberg and published by Carcanet Press at £3.95.

BOOKS

ENGLISH

Reading for health

Literature as Recreation in the Later Middle Ages
by Glending Olson
Cornell University Press, £11.75
ISBN 0 8014 1494 6

The argument of this book is that pleasure was recognized, in the Middle Ages, to have a legitimate and proper place in man's life, and that the pleasure to be derived from literature, principally stories, was not excluded from the general theorizing about the therapeutic and recreational value of pleasure.

It may seem surprising, to some, that such an argument needs to be made, given that people in the Middle Ages are likely to have enjoyed stories, anecdotes and jokes, as well as music and sexual intercourse, in much the same way as people at any other time; but the weight of the argument falls on the existence of academically respectable theorizing that sanctioned such activities. It is here, in combating the notion of a monolithic moral and didactic culture, and the notion of literature, especially, as that which is written for our "doctrine", that Professor Olson's book aims to break new ground, even if he does have to winkle out his arguments from some fairly odd nooks and crannies.

Professor Olson points out first how medieval theories of literature traditionally regarded pleasure as a mere preliminary or accompaniment to the searching out of moral profit. All other forms of "literary" pleasure, as in scurrilous tales and anecdotes, were immoral. Occasionally, pleasure seems to be acknowledged as something more than the servant of morality, as when a thirteenth-century commentator on Ovid's *Amores* says that the usefulness of the work is the pleasure it gives ("utilitas est delectatio") but it is to another source that we are to find this idea systematically exploited. It is, in fact, in medieval writing that the pleasure derived from story-telling is placed in the same category of usefulness as hunting, regularity of bowel movement, and diet, that is, as a means to good health. The moderate cheerfulness induced by listening to stories is good for you and helps ward off illness. "Life involves change and estrangement" is one recommendation, and other writers warn that grisly stories of death and martyrdom should not be read by those in weak health, and that excessively cheerful stories should be avoided, since one may drop dead from too great joy.

This explanation of the efficacy of "light reading" sounds quite reasonable, as does the recommendation of a *Tachinanth Salmian*, or handbook of health, that listening to stories is a good way of preparing for sleep. Chaucer makes amusing use of this idea in *The Book of the Duchess*, and certainly represents himself as feeling in much better spirits after his bedtime read. Elsewhere, serious examples of the "hygienic justification" for literature actually being used are hard to find, though Laurent de Premierfait does his best in his preface to his translation of the *Decameron*, which he says will help to raise the spirits ("esbaudir les esprits") of its readers.

Somewhat more serious is the "recreational justification" for literature, which takes as its basic argument that some form of relaxation is necessary for everyone, even for a desert saint, and that story-telling is one such form of relaxation. The image of the "hunt bow" is commonly used: the human will cannot always be kept tightly strung to God's purpose, otherwise it will grow flaccid. Jokes and anecdotes creep in under this privilege, though it is recognized, of course, within this stern ethical context, that the amusement they give is only to be tolerated in so far as it makes for a more vigorous return to the serious business of life.

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medical service" on Boccaccio's part. His problem, throughout this sensible and informative book has been to demonstrate the significance to the study of literature of the theories that he has been illustrating. Often "story-telling" exists on the fringes of the theories of a hygienic and recreational justification of pleasure, and the kind of story-telling alluded to exists only on the fringes of literature. It may be, that in trying so hard to prove that the Middle Ages could take pleasure in literature, Professor Olson has been unduly influenced by the argument that all medieval literature was didactic. A possibility he does not entertain is that the medieval he is so assiduously chipping away at does not exist, and that medieval writers and readers knew a great deal better than medieval and literary theorists what "pleasure" is to be taken in literature.

Derek Pearsall

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Literary theology

Paradise Lost: a humanist approach
by K. G. Hamilton
University of Queensland Press, £14.45
ISBN 0 7022 1626 7

Milton and the Science of the Spirits
by George B. Christopher
Princeton University Press, £16.80
ISBN 0 691 06508 X

These two books offer radically different kinds of assistance in our reading of Milton's poetry. Professor Hamilton, urbanely relaxed, eschewing reference to sources material or criticism, claims to "uncover the special significance and interest of *Paradise Lost* for the present-day reader... [rather than] concentrating on the origins of the poem in seventeenth-century attitudes". Professor Christopher, on the contrary, is convinced that the most significant perspective on Milton's poetry comes from an understanding of Reformation attitudes towards the nature and status of "text", whether scriptural, doctrinal, or poetical.

The first has all the virtues, and vice, of an approach seeking to show how *Paradise Lost* "lives" today. Hamilton insists that Milton's focus is on "man the measure of all things", illustrating through the poem's architecture, moral questions and characters. The poem's actions are considered in terms of psychological profiles and motivations. The essays, subtly compendious (if much that has been written about the poem, are sometimes acute, sometimes merely routine. But the dimension that is always missing is that of form: there is no recorded awareness that Milton is writing a Renaissance epic poem in twelve books. Is this because such a form insistently requires of its reader some contact with "seventeenth-century attitudes, beliefs and traditions"? Failure to acknowledge this small fact can have curious consequences.

For instance, the War in Heaven can be accounted for without any serious response to its extraordinary linguistic characteristics. Discussion of the meaning of Milton's "tragic" notes can move into an application of Hegelian tragic theory, in which context Hamilton rightly observes that "because it is a theory of tragedy rather than of morality, Hegel's concept does not call on us to decide whether Milton was right or wrong" - thus allowing a possibly odious seventeenth-century attitude towards the notion of dishonour.

Such evasions are characteristic. The "humanist approach" has to assume that there are certain things about Milton's poem not to be taken too seriously. "The sociology of religion," as Christopher shrewdly observes, "works against our taking the sacramental aspect of Milton's poetry very seriously because those who hold his precise doctrinal views today may be on the fringes of society and display an antagonism towards

education and high culture that would have made Milton gasp." Serious discussion of Milton's theology may run the risk of making the great poet culturally dead, but this is no reason for judging, as Hamilton does, the "fundamental" question of Adam and Eve's freedom of choice. Recognizing the problems "if the fall is the will of God, then is it still possible to accept that man has free will?", Hamilton suggests that "we must believe" that God foresaw the fall as a means of furthering man's best interests. While we are digesting the implication of this credo we are also asked to believe that this "does not mean that God's foreknowledge caused Adam's fall". While the humanist critic flounders, Milton himself and a vocal throng of Reformation theologians stand in the book's margins, helplessly bound and gagged.

In Georgia Christopher's study the voices have their say. Though difficult and rigorous, her book is ultimately much truer to the primitive complexity of Milton's work. Her argument is that Milton assimilated classical literature (that is, he read his Homer and Virgil and Ovid) not through humanist categories but Reformation ones. She shows us Luther and Calvin and Milton reading and responding to those same texts, and shows them reading scriptural texts. Where The Holy Spirit conducts the reader of the Bible to scriptural truth, that same *vox vox Christi* may break through other texts and conclude a reader to "literary epiphanies". Since, it is argued, God is conceived of by the Reformers primarily as Word, text, speech or locution, not image or physical symbol, and since reading, studying, meditating on the scriptures, and confessing and testifying comprise a characteristic "theology of the word", such epiphanies are more than merely "literary"; they are doctrinal too. "In Milton's tradition, the Spirit clings, not to bodies, but to language itself, and skips like Ariel along the tucks and gaps in the syntactical chain."

Christopher is a little like Ariel herself, fast as quicksilver, and illuminating all sorts of dark corners. Hers is a stimulating and rewarding book. She points out that Luther noticed that "the procedure of Moses is correct: he suggests by dots, as it were, situations that cannot be expressed in words" and urged exegetes to fill out these Old Testament laudate laus, accumulating details from their own situations, feelings and experience. For the humanist perhaps the dots don't count any more, but for Milton, whose experience was vastly literary, the grand fusion of epical and biblical, and the constant local *apophthegm* and *contaminatio* of ancient authors, producing a bewildering simultaneity of voices and verbal texts, affirms the doctrinal weight and strategy of his major poems. The emphasis here is not on Milton's inconveniently theological literature, but on his literary theology.

R. D. Bedford

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Liminal man?

Wordsworth's Vital Soul: the sacred and profane in Wordsworth's poetry
by J. R. Watson
Macmillan, £20.00
ISBN 0 333 30962 6

"Wordsworth's poetry, as a whole," writes Watson, "is concerned with beliefs and values which are basic to an understanding of man's relations with man, and man's relations to God." The generalization masks more precise interests. Professor Watson is concerned less with Wordsworth's poetry than with certain "religious" qualities that he sees as underlying the actual works themselves.

The ambiguity in the term "religious" is deliberate. At one level Watson takes the word in a technically anthropological sense in order to show elements in Wordsworth that can be compared with such primitive (and therefore, by implication, also universal) ritualized phenomena as Shamanism, while at another level he views Wordsworth through a much more narrowly Christian and theological perspective in order to show his relationship to the Old Testament tradition of the prophet-poet. The two levels, it is implied, are not in conflict, but opposite sides of a continuum that embraces the whole human experience of the "sacred".

At the anthropological level Watson identifies in, for instance, Wordsworth's journey across Salisbury Plain (at once an actual journey and a spiritual "progress") "a striking resemblance to the primitive rituals first described by Arnold van Gennep in *Rites of Passage*". Such rituals are, we are told, "marked by three phases: separation, margin (or *limen*, signifying "threshold" in Latin), and aggregation." In the first stage the subject becomes an outcast from the norms of conventional society. The ensuing "liminal" condition is characterized by what is called *communitas*: a word that combines a sense of unranked fellowship with all mankind and a sacred or holy state in which the subject, freed from institutionalized relationships, experiences a new potency and insight. The final reintegration (as in the ending of *The Ancient Mariner*) involves once more a clearly defined system of rights and obligations. At the theological level - essentially that of content rather than structure - Wat-

son draws parallels between Wordsworth's subsequent vision of Nature and Martin Buber's famous distinction between "I-Thou" and "I-it" relationships. The Nature Wordsworth recaptures is a sophisticated and philosophical version of the instinctive childhood sense of a living environment of which the self is an organic part.

If neither of these strands is particularly original in itself, Watson's synthesis is both subtle and illuminating. Though his argument is essentially historical he provides, in effect, a latter-day argument for Wordsworth's sense of the universality of his themes from low and rustic life, as well as helping to place him more firmly in the great tradition of English religious poets.

Nevertheless, stimulating as Watson's argument is, for it to be wholly satisfying there are two further distinctions that need to be clarified. The first concerns an ambiguity inherent in the summary of van Gennep that Watson quotes. It seems to me that being "liminal" - the state of being on a threshold and about to pass into another phase - is fundamentally different from that of being "marginal". For example, Richard Leakey's vision of early man is as being essentially "marginal" in his life-style, neither at home on the plains nor in the forests, ill-equipped either for hunting or quick escape. His big brain and social adaptability arising directly as a consequence of not "belonging" in any safe ecological niche. Man is here "marginal", but not "liminal". On the other hand, the obvious theological parallel, that of the medieval view of man as an "amphibian", part beast, part spirit, at home in neither the animal nor the heavenly kingdom, is fundamentally "liminal". Dante, for instance, is in no doubt that he stands on the threshold of a higher existence, even if the consummation is not of this world. It is easy to see how Wordsworth's solitudes and philosophic pedlars are marginal; it is less clear that they are liminal. The second distinction arises from this, and is reflected in Watson's sub-title. The opposite of the "sacred" state of "liminality" is surely not the "profane" but the *nimandus*. Wordsworth is hardly ever interested by the profane; he is deeply absorbed by the sacredness of the ordinary, and we have much to thank Professor Watson for in reminding us of that fact.

Stephen Prickett
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BOOKS

ENGLISH

Doing poetic justice

Daphne Ito Laurel: translations of classical poetry from Chaucer to the present
 edited by Richard Stoneman
 Duckworth, £24.00
 ISBN 0 7156 1646 3

In his introduction to this anthology Richard Stoneman states that great translations "add something to the literature of their own language", and that this can be achieved only by "one who is a poet in his own right." Yet Shelley, who made some of our greatest translations from Greek, wrote of "the vanity of translation", and although other great English poets are represented in the anthology, some of the finest translations here are the work of lesser men - poets who were raised above their normal stature by sympathy with the greater genius of Homer, Aeschylus, Aristophanes, Virgil, Ovid and Lucan.

Aristophanes, whose genius for comedy is unmatched in English, is miraculously re-created by John Huxford and B. B. Rogers; Horace is not less well treated by that versatile translator Sir Richard Fingliffe, whose version of *Aeneid* IV in Spenserian stanzas J. W. Mackail considered the best English translation of that much translated book. And Aeschylus, whose difficulties no one attempted till late in the eighteenth century, found in Louis MacNeice one who could combine "a fidelity to the sense with a style recognizable as real contemporary poetry."

This, surely, is the secret of all successful translation: Chapman presents Homer as Homer would have written in Chaucer's day, which could not be said of Pope, perhaps because it is easier to think of Homer in the context of Greveline, Drake and Raleigh than of Marlborough, Newton and Queen Anne. That, no doubt, is why Dryden and Pope were unable to compose their own heroic

poems, as Spenser and Milton had done, and must fall back on translating Homer and Virgil. Dryden's distinction of three methods of translation (metaphrase, paraphrase, imitation) is rightly commended; this anthology consists in the main of the second class, "where the author is kept in view by the translator... but his words are not so strictly followed as his sense. Dryden's example was Walker's *Aeneid* IV (from which no passage is here included). The author of the preface to the 1695 *Epigrams of Marcial* Englished sums up succinctly the demands made on a translator:

He that translates, than he that writes, does more.
 For he must please upon a double score;
 That of his author first, then on his own.
 Hold out compar'd, be good when read alone.

Many of these pieces will "hold out compar'd", but some which were once admired - Goethe's *Ovid*, Pope's Homer, Gilbert Murray's Euripides - perhaps will not. That is, indeed, a more severe test than "good when read alone"; but presumably most readers of this anthology will not impose the test of comparison.

The anthology admirably fulfils its primary purpose, and will introduce the reader who has little Latin and no Greek to versions which generally convey the "feel" of the originals, though a few have been chosen to illustrate the unintentionally comical: Stanyhurst's ruffe-ruffe Virgil, and Browning's *Agamemnon*, which suggests Housman's famous parody rather than Aeschylus, among these. There are considerably more Latin poems than Greek, because Latin was more widely known and, for the first three centuries, still spoken. Virgil and Horace, Catullus, Ovid and Martial are not represented by more than twenty English versions, but only Homer among the Greeks attains that number. It is odd that there should be "all those nautical epigrams of Marcial" but only four from the Greek Anthology, not even including Simonides on the Spartan dead at Thermopylae. (W. L. Bowles's fine translation found its way into the *Oxford Book of Verse in English Translation*.)

More care in production could reasonably have been expected in a book for which the extravagant price of £24 is exacted. There are too many signs of bad proof-reading, in the introduction, in the head-notes (which are brief and useful), and, worse still, in the texts. There are also errors of fact - Beaumont's

Crown of Thorns is not "lost" but can be found in the British Library MS Add. 33392 - and errors of transcription that are far too numerous to list; but the first line of Crasch's version of Horace *Odes* 2.13 should read "ill-nurtured" not "ill-nurtured tree" and Cotton's version of the second Epode has several errors of which perhaps the most revealing is "Holding the inverted culture home", for culter (cultor).

John Buxton

John Buxton was until recently a fellow of New College, Oxford.

The desire to affirm

The Novels of Colin Wilson
 by Nicolas Tredell
 Vision, £9.95
 ISBN 0 85478 035 1

To most of us, Colin Wilson already seems a historical figure. After the initial success of *The Outsider*, published in 1956 when he was 25, and the resulting years of acclaim and notoriety, Wilson has since engaged with increasingly obscure areas of the paranormal, sexuality, and the psychology of murder. (Indeed, his favourite and characteristic novelistic mode is to somehow combine the three.) He has been regarded both as a frigate enthusiast of the sixties - both with some justice. In fact, the tension between these periods, and their characteristic voices, to some degree helps us to account for the strain that may be felt in all of Wilson's work, and particularly in his novels.

Wilson has consistently denigrated, as "libel on life", what he thinks of as the bleak-willed hopelessness of modernism, dismissed Joyce and Eliot in favour of Wells and Shaw, and attempted to promote a programme of self-betterment that has its roots (not in its ends or nature) in Victorian optimism. As a kind of evolutionary existentialist, his single-minded aim has been to try to lay out the ground for what Nietzsche has called the "new philosophers", whose task it will be to lead us into an era of expanded consciousness. He believes - fairly enough - that the mind has powers as yet untapped and uncharted; he also believes - more controversially - that progress into the unexplored realm can be, under the right conditions, willed.

Not a simple act of will, certainly, nor even a complex one; rather, a kind of paradigm leap that might be accomplished through some happy combination of giftedness, right influence, seriousness, withdrawal, and (possibly) chemical assistance. In his discursive works, Wilson has attempted to map out the grounds for this belief, and to describe the symptomatology both of the torpid everydayness that he loathes and fears, and of that extraordinary potential for quickness that he senses in us. In his novels, from *Room in the Dark* (1960) to *The Space Vampires* (1976), he has tried to explore and to enact the various positions and possibilities posited in his expository works. But these novels, with rare exception, have never seemed to generate more than a small, if enthusiastic, readership. In part this may be an ironic byproduct of the success of his non-fiction, but largely it is because they are not, in the main, very good novels.

In his brief and useful short book, Nicolas Tredell makes an attempt both to acknowledge the justness of this assessment, but also to explicate the grounds which Wilson might have - and has - used to defend himself from it. Certainly, by the standards that he has rejected, Wilson's novels are difficult to make a case for. An amalgam of disparate "popular" and "serious" modes (the thriller, science fiction, the gangster novel, the philosophical treatise, a typical Colin Wilson novel is never likely to meet the demands of criteria of excellence drawn either from the canons of social realism in the nineteenth century or derived from the self-reflexive obsessions with technique in the twentieth. His aim, rather, has been to prompt - or demand - some facing up to the

deadness of a life controlled by what he has sometimes called the "robot": mechanical, programmed, futile. As early as 1962 Wilson was able to describe his ambitions in terms which, while modified in the succeeding years, still seem faithful to his intentions: "I see my problem as this: to start from Eliot's 'sense of his age', to take into account every thing that he took into account, and still to finish with an overwhelming affirmative vision". Never mind the casual problems here - the implicit attribution of unrelieved pessimism to Eliot, or the uneasiness of such a notion of "taking account" - the major difficulty lies in whether one can will such an affirmation. Especially: whether one can will it in advance of the experience out of which it is programmed to arise? We are left in doubt whether such an affirmation affirms anything other than the desire to affirm. And the desire to affirm, as we know from Lawrence, is a symptom more of dislike and despair than of any sleep-rotted optimism.

This becomes clear enough when we look at the heroes of some of Wilson's novels. Thus Gilbert Austin of *The Mind Parasites* (1967), telepathic, psychokinetic, a full-blown example of the man towards whom humanity has allegedly been striving, ultimately regards his uninvolved fellows as "alien and repulsive, little better than apes". Mr Tredell argues sympathetically that the inability to actually portray what it is that one envisages in the future doesn't discount the strength or even veracity of one's vision of it, but one is left with the unhappy feeling that if that is what we are evolving towards, we're already there anyway. There's enough hatred about now, and the extroverted powers that Wilson attaches to his version of it strike one as merely video-game accessories.

This is, perhaps, a little unfair, but the disposition to be unfair is a symptom of how far away the project seems to have gone, and of how high one's hopes for it were at the outset.

R. A. Gekoski

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Where are the heroes?

The English Hero 1660-1800
 edited by Robert Folkenflik
 University of Delaware Press, £14.50
 ISBN 0 87413 174 X

Robert Folkenflik notes the prevalent assumption that "an age is patently interested in mock-heroic has little interest in the heroic itself." He implies that the present volume will do something to correct this misunderstanding; but alas, with the honourable exception of his own study of "Johnson's Heroes" his contributors do little to justify this expectation. The majority of the essays offer further excursions over the well-trodden mock-heroic terrain of Dryden, Restoration comedy, Swift and Fielding, as though convinced that the only true heroes of the age were a motley garb of irony and bore a strange device of paradox.

Among the essays the most interesting is Claude Rawson's study of Swift's "self-apology" in his poetic sutures. Rawson describes Swift's adoption of a deliberately low style as unheroic rather than mock-heroic, "a knowing and sophisticated reply of [a] low and primitive curse".

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November 17, 1681 became November 17, the anniversary of Queen Elizabeth's accession day, was also the date of the great page-burning "ceremonies." However, he seems unaware of Philip Harth's essay "Legends No Histories" (1975) which pointed out that Dryden's choice of a publication date was determined by the fact that Shaftesbury was due to appear before a grand jury at the Old Bailey exactly one week later.

1. Paul Hunter's essay on "Fielding and the Disappearance of Heroes" is, for the most part, a conventional study of Fielding's debt to Scribnerian satires on "greatness." However at one point he allows, glancingly to an alternative heroic tradition in the works of such authors as Blackmore and Defoe. Blackmore is shrugged off, perhaps rightly, as a "stubbish minor talent", but Hunter's disregard of Defoe is quite unjustified. Crusoe, we are told, is a "non-exemplary" figure because he acquires wisdom painfully, through a process of trial and error. Moreover "Defoe has to take him a long way from England to raise Crusoe as high as he does." Hunter conveniently forgets that Moll Flanders' heroic struggles take place in the heart of London. Robert Folkenflik makes a particularly telling point in his study of Johnson's Heroes when he observes that for Johnson the idea of duration, of constancy through time, was central to his concept of true heroism. Folkenflik notes that in Johnson's definition of genius "the operative words, repeated a total of six times, are 'still' and 'always'. Johnson throws his emphasis on the persevering qualities." Peter Hughes's study of "Eros Heroism" is a wide-ranging essay designed to prove that the period witnessed "the displacement of male and military honour by the triumph of female and erotic virtue". However, since the majority of Hughes's examples are drawn from Corneille and Racine, the relevance of his conclusions to a study of the English Hero is somewhat tenuous. Arthur Lindley suggests that Richardson's Lovelace may be modelled on Dryden's Ammanor and Howard Anderson offers a series of character studies of the hero-villains of the Gothic romances of Horace Walpole, Anne Radcliffe and "Monk" Lewis.

It is worth reminding ourselves that Rousseau considered *Robinson Crusoe* a "wonderful" book, the single indispensable work of world literature. From its first appearance, readers of Crusoe's life and adventures noted the heroic qualities of the work, although accounts of the nature of that heroism have altered through the ages. It is not true, as James William Johnson suggests, that the period between 1660-1800 lacked literary heroes. On the contrary it abounded with them, and just a few may be mentioned here. Dryden's Aureng-Zebe (1676); Bunyan's Christian (1678); Blackmore's Prince Arthur (1695); Steele's Christian Hero (1710); Aitken's Cato (1713); Defoe's Crusoe (1719); Lillo's George Barnwell (1731); Pope's John Kyrle (1733); Glover's Leonidas (1737); and perhaps the most heroic of all, Richardson's Sir Charles Grandison (1754). None of these heroes receives any serious consideration in this volume, and most are not even mentioned. This very omission is perhaps the most revealing fact about the book. For the majority of these figures belong to a discredited Whig tradition, a stubbornly non-Augustan strain in eighteenth-century literature that has been too much neglected. Pious, middle-class and moralistic, the heroes of this tradition often appear inconveniently complacent to modern readers who demand that their saints should have more than a tincture of sin about them.

Perhaps instead of pretending that the eighteenth century had no heroes, we should ask ourselves why we find it so hard to come to terms with the real heroes that it had.

David Nokes

David Nokes is lecturer in English at King's College London.

Tristram Shandy is published in Oxford University Press's World Classics series on February 17 (£3.95). The text is based on the first editions of all nine volumes.

BOOKS

ENGLISH

Cultural background

Premises and Motifs in Renaissance Thought and Literature
 by C. A. Patrides
 Princeton University Press, £14.10
 ISBN 0 691 06505 5

Professor Patrides has brought together a collection of essays originally published separately in scholarly journals, the research for which was carried out while he was working on his best known books, *Milton and the Christian Tradition* and *The Grand Design of God*. Now he has recast them, documented them more fully, and arranged them so as to provide a comprehensive vision of the Renaissance at large, his concern being "to annotate certain developments in terms both of their background in our cultural heritage and of their foreground in our commonly shared literature."

It is questionable whether, despite his careful arrangement, this book provides the comprehensive view he aims at; rather, it remains a series of discrete studies of varying interest and importance, some of them (as he himself admits) concentrating on minute aspects of Renaissance thought. The 12 chapters deal with the following topics: the orders of the angels; the images of Jacob's ladder and the golden chain of Zeus linking heaven and earth; the date of the creation; examples of numerological analysis; the upright form of man; the Protestant identification of God's promise to Adam as "the first gospel" (the most interesting chapter); the death of Pan and the cessation of the pagan oracles; contempt for the multitude (the weakest chapter); God's use of the wicked, especially the Ottoman Turbans, as instruments of justice; the fable of Pope Joan (fascinating, but the least relevant chapter); literal and metaphorical interpretations of hell; the heresy that Satan will finally be saved.

Patrides is formidably learned in patristic and Renaissance theology, and for every point that he makes there is a wealth of documentation. When he claims that a view is widely held, he proves it in his footnotes; when he tells us that a view is rare, we know he is justified because of the mountains of material he has sifted. The reader will find in his listing the different classifications of the angels and the different estimates of the year of creation, and long footnotes detailing widespread adherence to the view, for example, that the upright form of man disposes him to the contemplation of heaven, or that the "seed" in Genesis iii. 15 is to be identified with Christ, or that Original sin is the ultimate salvation of Satan is a vile error. Patrides has always had an interest in the eastern church, especially the Platonists of Alexandria (manifest in his recently reprinted edition of the Cambridge Platonists), and he is helpful on differences between the eastern and western traditions. His procedure in several of these studies, after he has documented widespread support for a particular set of attitudes, is to indicate the cautious or questioning voices who mark the transition to a new ironical or comic mode of imagination to the brutalities of mundane reality. *The Manchester Guardian* commented, "Mr Sygne shows you the poison of disillusion, the bitter-sweet of passion." The community finally expels the beggars (blind once more). Conventional morality, when challenged, is brutal. Alienation was Sygne's major romantic subject.

The play was one of the Abbey Theatre's earliest explorations into Irish transmutation of French symbolism; and it was a difficult production. Robust peasant naturalism was difficult to reconcile with static, rhythmic ensemble before a formalized, painted decor. Sygne's lines were not easy to speak, nor were his moral attitudes readily accepted. Al-



A Protestant adaptation of an earlier drawing of Pope John giving birth, taken from *Premises and Motifs in Renaissance Thought and Literature*.

Patrides convincingly associates the identification of the seed in *Paradise Lost* X-XII with a certain tradition of Protestant polemic: "For Protestants, in short, Adam's recognition of the Saviour made him not merely a Christian but, more precisely, the first Protestant." Thus Protestants could rebut Catholic charges that Protestantism was a new religion. The naming of Satan as a "great Solmi" (*Paradise Lost*, I. 348) would have carried for the contemporary reader connotations not only of cruelty and tyranny but also of the divine Providence using evil as an instrument of good, just as the Turks were allowed to chastise Christianity. The book would have benefited if Patrides had made more use of his learning to illuminate the literature of the period in this way.

Isabel Rivers

Dr Rivers is lecturer in English at the University of Leicester.

Synge's final versions

The Well of the Salts
 by J. M. Synge
 edited by Nicholas Grene
 Colin Smythe, £7.95 and £3.95
 ISBN 0 86140 127 1 and 128 X
 J. M. Synge
 by Eugene Benson
 Macmillan, £10.00 and £2.95
 ISBN 0 333 28921 8 and 28922 6

The Well of the Salts tells how two old, blind beggars, Mary and Martin Douli, are restored to sight by a miracle but learn to long for blindness again. It is an early treatment of the theme of the loss of sight. The play is a study in the use of language, a study in the use of the spoken word as a means of communication. It is a study in the use of the spoken word as a means of communication. It is a study in the use of the spoken word as a means of communication.

Eugene Benson's *J. M. Synge* is a straightforward, admirable general introduction to the playwright. The method is traditional, like, then work. The history of the Abbey is told again; the writer is given his proper context in contemporary Ireland and Europe. Benson manages to compress a good deal of material with clarity, particularly impressive being the balanced way he indicates the mythic overtones of the plays without reducing them to stiff allegories (on a specific issue, though, one might ask whether the Christian allusions in *The Playboy* make the

hero a Christ figure or rather a Satan-like parody romping to the judgment day? The work cumulatively enlightens by cross reference within all Synge's writings. At a time when English studies are so often disfigured by the cancer of cantankerous methodological controversy it is refreshing to see the virtues of traditional scholarship so luminously put to use.

Malcolm Kelsall

Malcolm Kelsall is professor of English at University College, Cardiff.

The use of imprecise writing

T. E. Hulme
 by Michael Roberts
 with an introduction by Anthony Quinn
 Carcanet, £9.95
 ISBN 0 85635 411 2

When Hulme was killed in Flanders in 1917 he had published some articles on philosophy, art and the war, mostly *Orages's New Age*; and he had translated Bergson's *Introduction to Metaphysics* and Sorel's *Reflections on Violence*. Otherwise his literary remains amounted to his "Complete Poetical Works", five short poems preserved in Pound's *Riposte* (1912); and the notebooks and manuscripts from which Herbert Read put together *Speculations* (1924), the book by which he has been mainly known and will in the end be judged.

Eliot was enthusiastic about it in *The Criterion*: "In this volume [Hulme] appears as the forerunner of a new attitude of mind, which should be the twentieth-century mind, if the twentieth century is to have a mind of its own." Well, we know what sort of mind Eliot was projecting, one which believed in Original Sin and the need for austere discipline and absolute values. Hulme hadn't believed those things as Eliot did, and might well have developed different beliefs had he survived the war. Yet his fragmentary notes and outlines, perhaps by their very immaturity, did stand on the side of Classicism in that other great war against Romanticism. Eliot probably encouraged Michael Roberts to write this book, which Faber published in 1938. By its style of discursive, generalized lay-sermonizing it addressed itself to those who were already of Eliot's mind. A sort of exposition of Hulme's Spe-

culations is spun out of the code-words: romanticism, humanism, liberalism, classicism, original sin, absolute values, impersonal authority. But for page after page, while chapters even, the discussion will touch upon nothing definite. The chapter on Hulme and modern poetry is the only one with the grit of particulars in it.

What is the use of imprecise writing? Kate Leclercq recorded, in an unpublished memoir, that Wyndham Lewis once set upon Hulme in a fit of sexual jealousy, and Hulme retaliated by hanging Lewis upside down by his trousers torn-up on the tall iron railings in Soho Square. Roberts gives this as "the story of Hulme emphasizing an argument... by holding him upside down on the railings in Soho Square." Quinton carries on the process by having Hulme carry Lewis upside down over the railings, which has the perhaps desired effect of making Hulme appear twice life-size. Roberts, by sheer carelessness, can make him a monster: "For a woman to argue with him was not only useless; he thought it was wrong, and he would make use of Gaudier's knuckle-duster with a strength only tempered by a kind of fierce kindness."

Hulme's thought deserves a more accurate and exciting analysis than Roberts attempted. He was not an original thinker, nor much of a philosopher. But he was a deeply reflective sensibility capable of reverberating powerfully to ideas picked up from Bergson or Sorel or Pascal. Thinking that life is of value only in the mind, he was working out a vision of existence as an ashpit with the chessboard of reason laid upon it. His mind was of the type which Beckett has systematically exposed.

His positions generally depend, as Roberts remarks, upon false antitheses. One may reject the idea that nihil is naturally good without thereby being committed to the idea that he is essentially bad. Roberts advocates the middle way: there is some good in people, but the teaching and discipline of the Church is needed to bring it out. His having that point of view possibly saves his book from being totally superseded by A. R. Jones's *Life and Opinions of T. E. Hulme* (1960). But it is possible that that whole way of thinking is unreal.

Hulme was one of the more interesting minor figures of his era. But appreciation of his significance is not advanced by exaggerated claims. Anthony Quinton writes that he was extremely influential, even more so, he seems to be saying in a not very clear paragraph, than Bergson. That would take some proving. It won't do to assert that he was "the leading theorist" of the Imagiste moment. Nor will it do to offer Eliot as undoubtedly "the most important single recipient of Hulme's influence." The ideas which Quinton thinks Eliot took over directly from Hulme were ones he had derived from his Harvard mentors, Pound and More and Santayana, and had begun to make his own before he knew of Hulme. Roberts, it should be said, knew better than to make either of these claims.

Rather than this reprint of a book which has had its day, we could have done with a collection in one volume of Hulme's writings at present dispersed in *Speculations*, *Further Speculations* (1955), and A. R. Jones's book.

A. D. Moody

A. D. Moody is reader in the department of English and related literature at the University of York.

Dealings with Lamb

Companion to Charles Lamb: a guide to people and places 1760-1847 is by Claude A. Prance and is published by Mansell at £18.50. Primarily a biographical dictionary, the book has entries on a large number of Lamb's family, contemporaries and friends, including many contacts in the theatrical and artistic professions. Also included are later commentators and editors of Lamb. As to the "places" of the sub-title, there are entries on houses in which the Lambs lived, as well as other places they visited or were associated with, such as East India House, where Lamb worked from 1792 to 1825. There is also a chronology of Lamb's life, and family trees for some of his contemporaries.

Dickens and Women

MICHAEL SLATER

Illustrated with 8 pages of black and white photographs
 10 February 83

In this first full-length study of an intriguing aspect of Dickens's artistic achievement, Michael Slater looks at Dickens's own experience of women - as son, brother, lover, husband and father; at his perception of female nature and conception of women's role in and out of the home, and at the ways in which these found expression in his art.

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Pastoral and politics
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Don's diary

Sunday

Re-entering Beirut was as I imagine landing in spaceships Columbia after its dream journey. For two weeks we have been drifting across Europe, a night in Paris, a day in our Tuscany house, two or three days in Peloponnesos revisiting Mycenae and Epidaurus, three days at sea. Now suddenly, in the space of a single day, we had to run the gauntlet of landing the car at Latakia in Syria, cross the border and drive through northern Lebanon still in the hands of Palestinians and Syrians of dubious intent, cautiously skirt any street fighting in Tripoli then perhaps arrive at the capital to find out apartment bombings to smithereens or occupied by refugees. We kept reminding ourselves that people were loading their normal lives every day all along our way, it was only the selective nature of news bulletins that made it all seem so dangerous. We showed and wept with relish of tension when at last we turned the key and found our flat exactly as we left it in the fifth week of the Israeli invasion last July, give or take a few bullet holes.

Monday

A new sign outside the faculty welcomes me aboard on behalf of the American Marines. Mountains of earth obstruct my way, thrown up to shield Israeli tanks in their bombardment of neighbouring Beirut. Our tarmac forecourt has been churned into a morass, every pane of glass has been systematically smashed in the five-storey glass and concrete building but the structure itself has stood up well.

The group of students and staff in the chairman's office greet me with what sounds like a shout of acclaim. I am surprised and touched until I find out the reason: they had just that moment gathered there to consider what to do about my statistics course in my absence. I am two weeks late for rejoining due to an accident earlier in the summer, I escaped all the perils of Beirut only to fall off a mountain in Italy with serious damage to my right arm.

My colleagues regale me with stories of the appalling mess they found when they first returned after the withdrawal of troops. All the laboratory equipment stolen or smashed, the floor piled high with debris and broken glass, everywhere piles of human excrement, trade mark of passing armies throughout history. Every drawer and cupboard and pile of rubbish had been seceded with "hate bombs", plastic bottles which on touch explode into fragments and embed themselves in human flesh, invisible to X-rays. The mammoth clean-up has been carried out by the Marines. Some colleagues took the view that this was the last they could do when so many lethal objects had been dropped on our heads by courtesy of the American taxpayer but the Lebanese are too deep-rootedly cosmopolitan to hold individuals accountable for the actions of their governments. On the whole we are grateful to them and I even forgive them their "Welcome Aboard" notice. I catch sight of them in the corridors and they fall on me when they discover I am English. They want desperately to know the Arabic for basic phrases such as "You are beautiful" and "I love you". So many ravishing girls students flitting about and they cannot even say "Hello".

Tuesday
My first lecture. It is on linear models and the board is soon starred with mathematical symbols. I have picked up while the Israeli invasion interrupted or and shall finish course in time for Christmas. I find I can write on the board with my injured arm but cannot rub it out afterwards. The class come to my rescue and take it in turns until one bravely snatching the board the others away and appoints myself to do it. I notice the deep respect with which they

movements that make up what is called grace. I am still painfully re-educating my own to carry out even minimum functions.

Wednesday

Today every street is gay with flags for independence day. With so much of Lebanon still occupied the title is ironic, none the less the city has a champagne elation. Nothing can quench the joy of having the frontier between East and West swept away, people stroll safely in the streets and take coffee in the pavement cafes until late at night. I take an afternoon stroll in the old centre which I have not seen for seven years, while it has been a Tom Tiddler's ground for warring gangs masquerading as guerrilla fighters. I have more desire to weep than to sing, I can scarcely find my way, the destruction and chaos wrought by civil strife in this ancient heart of the capital is almost more hideous than the churn up of the southern suburbs by Israeli bombs.

Thursday

After class I nerve myself to head for the library. It might have been worse. About 80 per cent of the books have survived in more or less usable condition. Most of them are standing about in piles on the floor waiting to be checked. I think of all the works and days of hands we all have spent perusing now texts and searching out missing volumes to complete runs of periodicals. Brute war deplores carelessly in a day the work of many lifetimes.

Friday

As I walk towards the faculty eight of my more obstreperous first-year students bear down on me in an ancient Mercedes, whooping and jeering. As they crowd round I start to say I had hoped the Israelis had taken care of them but the words die in my throat. Instead I touch each one to make sure they are still in one piece and inquire anxiously about their families. So far all my boys are OK but there are still many empty places.

The weather is still sunny but a cold wind from the snowy mountain tops makes a leap through the glass-paned windows and licks its tongue into the corners of my classroom. I keep warm moving about but the students shrug into their djellabas and anoraks and complain bitterly. An army of glaziers and painters is at work however, new sheets of thick architectural glass are stacked everywhere, marked in Arabic figures for the number of the room for which they are intended. New equipment is being moved in. Within a few weeks the only sign of the Israeli passing will be that the university building has had a face lift. The courage of this people is not to fight battles but to shrug off the blows and start rebuilding before the dust has settled.

Saturday

Time to breathe. I take a couple of visiting English students to the mountains. We drive to a point high above my favourite valley and walk down a difficult footpath to the village, below inaccessible to cars. Qorqorah is its name. The villagers give us white cheese, olives, then mounlain bread and apple jam. We return their gifts with biscuits and chocolate and highly inappropriate medicines for their many ills. It is a beautiful land still uninvolved by the brutal soldiery.

Peter Heymans

The author is English and is professor of mathematics in the Lebanese University, Beirut. He is the only Arab professor in the faculty of sciences.

The death of a great teacher



Patrick Nuttgens

dom, the individual and the group. We wrote essays for these meetings and had them taken to pieces by the doctor.

I cannot adequately describe the experience, partly of those discussions but more especially of the tutorials in history that we had in the sixth-form library. For one mind-murdered in a series of intellectual encounters that changed for ever my understanding of history and opened up a world of speculation and delight.

It was literally a revelation. A high scorer in school certificate history, I had thought that I more or less knew what history was about. Now suddenly, with Ullmann crouching at the head of the table in the library and challenging everything we said, it was all blown to pieces, picked up bit by bit and put together again in a totally new pattern.

Whatever may have happened to the others (we were a small group and rather a bright one) it happened to me in a discussion about the meaning of the Renaissance. Ullmann would not accept any of our offerings about its meaning, its social, economic, literary, artistic. To him, a scholar immersed in the intellectual world of the Middle Ages (he later wrote a great book about *The Individual and Society in the Middle Ages*) the Renaissance was a much more fundamental revolution - nothing less than a revolt against an entire philosophical system.

I am not really concerned with

whether his interpretation was right or wrong, defensible or not. What I experienced was the impact of having encountered an original mind and the intellectual energy of a great teacher. History could never be quite the same shape again. He saw it - and taught us to see it - as great unity. Because he was himself a lawyer who had turned to history, he brought together history, law and politics and found a unity that he may sometimes have exaggerated in the whole intellectual climate of the time.

I think it is worth emphasizing the impact he had on us as a teacher. I know he was regarded as a great teacher by many students of Cambridge as well. Some of his fellow scholars may have missed that simply because of his insistence on the importance of research - "research" and his total devotion to it. For him it had to be research into primary sources, going back constantly to the original. I suppose even at school I must have indicated a certain scepticism about research because he went out of his way to point to those of my contemporaries who would be quite wrong (actually he was in my place). "I know the kind of person you are, Nuttgens" he would say in a sort of twinkling way that brought a kindliness to his words that might not be obvious from seeing them to print. "You are the kind of person who will write an entertaining piece or book that is merely the eleventh book out of ten". He was quite right. (I have actually carried out some genuine research but I doubt if Ullmann would have been much impressed.)

He was a very nice man. When, at the end of one of my essays he wrote a scathing quotation that I knew he could only have got from his wife, I waited for over a year and manipulated conversation until I could score off him with the same quote; there was a momentary silence and he nearly collapsed laughing.

On the other hand, when a year or two ago I was sitting in his room at Trinity and congratulated him on his part in the new history faculty building of Cambridge, I thought he was going to go out of his mind, or even worse, take the sherry out of my hand. He shook all over, assured me repeatedly that he had nothing to do with it and would not even go into the building. He then picked me up when I tripped over a paving stone in the quad and was almost absurdly corned.

Like many another student whose intellectual life was enriched by knowing him, I salute Walter Ullmann's memory and am sure he is finding out the truth about the medieval papacy in heaven.

Unlike me, pupils today are computer literate. I have used computers but I could not claim to be happy with them. I do not yet know how to make real use of a home computer. Can a machine give me better service than my accountant?

Important though they are going to be in the home, their use in industry and the opportunities presented by them is more immediate. Yet I am told that British companies, despite the recession and high unemployment, have acute recruitment problems in the computer software technicians have become as scarce as too can be found.

It is not just that there are hundreds of people missing out on good jobs. The repercussions are much wider. The lack of suitably experienced people may lead to a complete inability to enter certain markets. Other effects of the shortages may include longer delivery times, postponed investment plans and hold ups in introducing the latest technology. And a industrial activity picks up, shortages are likely to worsen.

The "Micro in Schools" programme, familiarizing teachers and developing software is more advanced than anything yet appearing in French schools. But we are still not managing to cope adequately with the sheer rate of technological change.

Is there a role here for the Advisory Council in Adult and Continuing Education? As it comes to the end of its term of office, in October, I feel members might be forgiven for feeling that there is little more useful to be done than to wait and see what happens.

LETTERS TO THE EDITOR

A diplomatic approach to the two-year debate

Sir, - May I register agreement with the cautionary thrust of your editorial ("Three years in two?", *THESE*, January 21) in arguing for greater diversity rather than the substitution of a new two-year orthodoxy in place of the existing pattern of honours degrees. Support for these new proposals should rest on the extent to which they contribute to a genuine widening of higher education, both in terms of access and course design.

To the right framework the two-year degree/diploma does have a very important contribution to make. Fortunately policy makers are now in a good position to gauge this potential: you are quite right to cite the experience of DipHE courses, some of which have now been running for the better part of a decade involving some thousands of students. There is now a large pool of empirical data to draw on, much of which is highly relevant to the present debate. Though I speak for Middlesex, all major DipHE courses have a remarkably similar story to tell despite differences in structure and emphasis.

What we have learned from systematic monitoring of student achievement and aspirations is this:

1. Access can be widened without reducing standards.
2. Mid-career entrants can perform as well as younger students.
3. Many students, perhaps half, would stop with the Diploma if there were employment opportunities commensurate with this level of education.
4. Most would not wish to begin the course if there was not at least the opportunity to proceed to an honours degree.
5. In most cases it is not necessary for students to determine an

academic specialism before they begin higher education. Given a suitably flexible course structure and a wide choice of foundation studies, students can find direction without loss of time.

The process of discovering direction enhances the educational experience: as a result students wishing to proceed to a degree do so for reasons of intellectual excitement as well as for professional goals.

7. Because the DipHE has helped lower the psychological threshold to entry for people overawed by the prospect of an honours degree, the social class base of entrants has widened.

8. Diplomates have demonstrated that they can transfer with success directly into the final year of non-linked honours degree courses both within and across institutions.

9. Since the spread of degree classifications ultimately achieved by diplomates is entirely commensurate with those of conventional students, and diplomates usually start from an inferior formal educational base, the DipHE experience is arguably more intense than the first two years of an honours degree rather than less intense as you have suggested.

10. The progression of DipHE students provides very strong evidence for the viability of credit transfer schemes suggesting that the inflexibility of the present system is wasteful and unnecessary.

Finally, we have also learned that successful innovation requires direction and coordination. Criticism of the DipHE usually rests on two propositions:

- (i) It has not been widely implemented.
- (ii) It has not fulfilled its role as a terminal qualification.

Overseas students

Sir, - I am writing further to the article by Felicity Jones (*THESE*, January 21) to refute the accusation of racism in connection with admissions to the Polytechnic of Central London.

Admission to all courses at the PCL is based on academic merit and suitability for the course, and matters of national, racial or ethnic origin are irrelevant. The polytechnic is, however, in common with other higher education institutions required to charge certain students the overseas fee and has experienced considerable problems in identifying those overseas students who have not been ordinarily resident in this country or the EEC for the three years prior to their admission. This form to identify those students who should pay the higher rate of fees. It is sent to all "overseas origin" (overseas origin) who inquire about the courses to the school of engineering and science, rather than with offer letters, in an attempt to speed up the admissions process both for candidates and the polytechnic. Past experience has shown that many candidates did not complete the form or did not complete it fully and it was, therefore, necessary to indicate that candidates would be classified as overseas students unless they did so.

The questions in our form reflect guidance from our funding authority, the HEA, as the meaning of ordinary residence.

It is hoped that the recent Law Lords ruling on ordinary residence will enable the Department of Education and Science to simplify the fee assessment criteria which will enable institutions such as this to simplify admission procedures; present practices indicate the complications and difficulties of the existing criteria for fee assessment.

Your faithfully,
M. A. MILLER,
Academic Registrar,
Polytechnic of Central London.

Japanese salaries

Sir, - Glynis O. Phillips, the enthusiastic writer of Don's diary (*THESE*, January 21) is impressed by the fact that "top professorial salaries" at Gunma University, Japan, only amount to £1,000 per month. He is clearly unaware that all members of

Library costs

Sir, - In his criticism of your report on the National Book League's study of university, polytechnic and college library expenditure Mr Graham Mackenzie (*THESE*, December 31) refers to scale effects and the influence of the research orientation of the parent institution.

An economic study of academic library cost structures recently involved my visiting the United Kingdom and one of the matters I discussed with Mr Mackenzie, and others, was that of economies of scale in these libraries.

The results of cross-sectional analyses of Australian university enrolment and library cost data suggest that the marginal recurrent total costs of providing a service for postgraduate students (a possible proxy for Mr Mackenzie's "research orientation") may be eight times as high as for undergraduates. At the same time, economies of scale

The right of appeal

Sir, - I was disturbed to read your report (*THESE*, November 19) of Mr Alistair Wilson's proceedings in the European Court against Hull University, who have refused to allow him to appeal on academic grounds against an examiner's decision.

I have recently witnessed a similar case involving a colleague who submitted a PhD thesis to the same university which was rejected. This colleague, who has been a university lecturer for some years, wishes to appeal on the grounds that the competence of the examiners lay outside the main topic area of the thesis; in particular, the request was for a further opinion from one or more independent examiners.

I and another colleague wrote in support of this form of appeal in the candidate's work and our view of the competence of the candidate. The response of Hull University was to process the appeal in a formal manner, simply concerning itself with

The implementation and development of DipHE has not proceeded in the absence of overt government support, and in the absence of parallel developments in the university sector. Therefore it should come as no surprise that public and private employers and professional bodies have so far largely failed to make specific provision for diplomates. Unless there is a significant shift the new proposals could well founder on the same shoals.

Yours sincerely,
JOEL GLADSTONE,
Course Head,
Diploma of Higher Education,
Middlesex Polytechnic.

Sir, - While generally welcoming the news that the expected hostile reaction to the development of two-year degree courses has not occurred, I would like, nevertheless, to take issue with several points in your leader "Three years in two?".

You refer to "lower" entry requirements in relation to DipHE courses, implying that levels alone guarantee future academic success. DipHE, in common with other degree courses, require A levels from your applicants. However, as the creation of a new award gave an opportunity to take a long hard look at the content and process of higher education, many of the resulting DipHE courses do not build on a precise knowledge base. In admitting mature students, who are attracted by the course design, we look for indications of intellectual ability and potential, which are not necessarily the same as a specific number of A levels. The success on post-DipHE courses of those students without normal entry qualifications confirms our belief that entry standards are

not lowered by taking factors other than A level into account.

You rightly emphasize the British tradition of the bachelor's degree as the major terminal award, the DipHE experience is yet another confirmation of this position. Employers are now prepared to consider diplomates on the same footing as graduates. In spite of this, our students, even if their original intention was to complete their studies with a DipHE, inevitably aim at a degree, and preferably an honours degree. At present the DipHE offers flexibility in opening up many possible routes to graduation. If the new proposals will block this continuation for all but a select few, then it will inevitably frustrate the ambitions of many able students and create a divisive two-tier system. I have difficulty in conceiving of any system of ensuring that the majority do not continue to three or four-year degrees other than by limiting places and financial aid.

Your discussion of two-year generalist as opposed to traditional three-year degrees would seem to assume parallel developments with little interchange between the two. As our experience shows, however, two-year courses need not necessarily be generalist, and there can be successful interchange between courses of the two types. If a genuinely pluralist higher education system is to develop, the flexibility should extend beyond a student's initial choice, towards a much more open approach with free interchange between all courses.

Yours sincerely,
GINNY ELEY,
Chairman, Association of Colleges Implementing DipHE,
c/o North East London Polytechnic.

appear to dictate that at the margin the library of a small university of 2,000 Full Time Equivalents (FTEs) is likely to be just over twice as costly, per capita, as one serving a population of 15,000 FTEs. Perhaps, perversely, it was not possible to establish the existence of a direct correlation between the relative levels of university resource funding per se and library costs; in fact there were some indications that the true relationship might even be inverse.

As far as library cost components are concerned, scale effects arising from salaries and general running costs are considerably lower than those associated with new books and periodicals, for as one student population falls from 15,000 FTEs to 2,000 FTEs marginal acquisitions costs rise by a factor of 2.5. The marginal acquisitions costs associated with undergraduate and postgraduate enrolments also appear to be more disparate than is the case with total costs, being in the order of 1:11.

procedures used during the conduct of the examination. There was no response from the chairman of the relevant board of studies or any administrative official of the university to the substance of the points made by and on behalf of the candidate.

It does seem to be unreasonable and unnecessary for a university to refuse a student the right to appeal on academic grounds. Examiners can be wrong, and in the interests of natural justice alone, clearly formalised procedures ought to exist so that a second opinion can be obtained. The GSE and GCE examining boards have such procedures which are widely used, and I can see no overwhelming reason why a university should not have them too.

Yours faithfully,
HARVEY GOLDSTEIN,
Head of Mathematics,
Statistics and Computing,
University of London Institute of Education.

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Australian and British university libraries are sufficiently similar in their cost structures and general characteristics to support the belief that these two kinds of disparities are also likely to occur in British universities. Moreover, recognition of these factors is vital to the proper interpretation of national compilations of simple statistical data on libraries.

Finally, Mr Mackenzie alludes to the high proportion which salaries bear to total academic library costs. It is perhaps worth mentioning that a time-series analysis of data extracted from the Unesco Statistical Data Bank revealed a discernible worldwide trend in which the salary content of academic library costs has, for more than a decade, steadily encroached upon the non-salary component.

Yours faithfully,
JOHN R. BROCKMAN,
Branches Librarian,
Western Australian Institute of Technology.

Einstein's papers

Sir, - As the person responsible for the Einstein archives on behalf of the Hebrew University of Jerusalem, I wish to comment on your item "Einstein's papers reach their promised land" (*THESE*, December 24).

Einstein left his papers to trustees of his estate, Dr Otto Nathan and Miss Helen Dukas. They were to be transferred to the Hebrew University at the discretion of the trustees, at the time they considered proper. Their eventual transfer took place in accordance with the decision of both trustees.

Full cooperation exists between us and the Princeton University Press as publishers of the Einstein papers. It is incorrect that "the Jerusalem University was unhappy about the publication of the papers by Princeton, but was unable to prevent it". Nor is it correct to speak of a "piecemeal publication" by the press. It is a vast undertaking and will undoubtedly extend over many years.

Sincerely yours,
R. YARON,
Jewish National and University Library, Jerusalem.

Letters for publication should arrive by Tuesday morning. They should be as short as possible and written on one side of the paper. The editor reserves the right to cut or amend them if necessary.

Union View

Where clear thinking is essential

The headline in *The THESE* (January 21) reports "Double boost for two-year qualifications". Two accounts then followed: one refers to the decision of the NAB board to call for a fuller investigation of the proposals for two-year courses which might form part of the strategy for local authority higher education in the late 1980s. The second refers to one element in the SDP proposals for education reforms, still to be approved as party policy, which envisages a change in the pattern of higher education courses currently on offer with some kind of two-year general foundation course after which students would either terminate their studies and enter employment or continue with more specialized courses to complete their qualifications. To compound the confusion *The THESE* also refers to the fact that the present Secretary of State is known to favour "the introduction of shorter, more concentrated degrees, where feasible".

The debate on higher education and future patterns of provision is unlikely to be assisted by this kind of confusion. The headline seems to imply that Sir Keith, the NAB and the SDP are in favour of similar proposals. In reality the very diversity of the proposals for two-year qualifications is more important than the fact that they all suggest courses lasting two years. Sir Keith simply wants to reduce or contain costs without alienating potential Conservative supporters by depriving them or their children of access to higher education. The SDP says it wants to break the mould of three-year full-time courses which has dominated English higher education. But unless a significant proportion of students were to cease their education or have it terminated after the initial two years, the SDP package would presumably lengthen most courses.

natfhe

The NAB has sensibly refused to examine the issues on the basis of an extremely short paper, which certainly does not examine in any detail the two-year course strategy. It has commissioned a more detailed set of proposals relating to the future of public sector HE, in which course length will be an important component. Both the board and committee insist that any debate about two-year courses must take place in this context and relate to both sides of the binary line.

If we are to have a debate about two-year qualifications, and it now seems almost inevitable, then there is an urgent need to clarify what is being discussed. Are we for example discussing the provision of two-year degrees and would these be similar to the present three-year courses but somehow concentrated into two? Are we to assume a sort of 2 + 2 model with an initial two years of a more broadly based nature to be followed by a period with a greater degree of specialization? If so, what is wrong with the Dip HE and the various BEC and TEC qualifications which already exist?

Clarity is also essential because there must be real fears, particularly in respect of the present Government, that concept of a two-year qualification will be developed in a way which neither widens access nor offers an alternative pattern of higher education provision. That is why the present debate is so potentially dangerous. We need to pay scrupulous care to the terms of the debate so that we do not unwittingly let the pass on the next generation of potential students seeking access to the system.

Jean Bocoock

The author is Assistant Secretary for Higher Education at the National Association of Teachers in Further and Higher Education.